

1st search

Wiener 10/002171 11/22/04 Page 1

=> FILE REG

FILE 'REGISTRY' ENTERED AT 14:42:14 ON 28 JUL 2004

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

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STRUCTURE FILE UPDATES: 27 JUL 2004 HIGHEST RN 717822-84-9

DICTIONARY FILE UPDATES: 27 JUL 2004 HIGHEST RN 717822-84-9

TSCA INFORMATION NOW CURRENT THROUGH MAY 21, 2004

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at:

<http://www.cas.org/ONLINE/DBSS/registryss.html>

=> FILE HCAPLUS

FILE 'HCAPLUS' ENTERED AT 14:42:18 ON 28 JUL 2004

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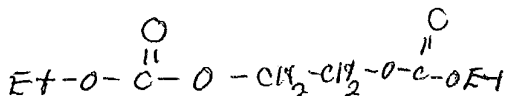
FILE COVERS 1907 - 28 Jul 2004 VOL 141 ISS 5

FILE LAST UPDATED: 27 Jul 2004 (20040727/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> D QUE

L55	1 SEA FILE=REGISTRY ABB=ON	35466-87-6
L56	4 SEA FILE=REGISTRY ABB=ON	35466-87-6/CRN
L57	5 SEA FILE=REGISTRY ABB=ON	L55 OR L56
L58	18 SEA FILE=HCAPLUS ABB=ON	L57
L59	12 SEA FILE=HCAPLUS ABB=ON	L58 AND (ELECTROCHEM?/SC, SX OR ELECTROLYTE? OR BATTER?)



=> D L59 BIB ABS HITIND HITSTR 1-12

KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505

L59 ANSWER 1 OF 12 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2004:201024 HCAPLUS
 DN 140:220742
 TI Lithium secondary **batteries** showing excellent high-voltage cycle characteristics
 IN Yamazaki, Ikiko; Noguchi, Takehiro; Numata, Tatsuji
 PA NEC Corp., Japan
 SO Jpn. Kokai Tokkyo Koho, 12 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004079426	A2	20040311	JP 2002-240812	20020821
PRAI	JP 2002-240812		20020821		
OS	MARPAT 140:220742				

AB The **batteries** comprise cathode active materials showing average discharge potential of ≥ 4.5 V against metal Li and **electrolyte** solns. containing $R1OCO2R2OCO2R3$ ($R1, R3 = C1-4$ alkyl; $R2 = C1-3$ linear or branched alkylene). Preferable alkylene biscarbonates are also specified. The cathode active materials may be spinel-type Li manganates, especially those having composition formula

Lia ($NixMn2-x-yMy$) ($O4-wZw$) (I)
 $(0.4 < x < 0.6; 0 \leq y; 0 \leq z; x + y < 2; w = 0-1; a = 0-1.2;$
 $M = Li, Al, Mg, Ti, Si, \text{ and/or } Ge; Z = F \text{ and/or } Cl).$

IC ICM H01M010-40

ICS H01M004-02; H01M004-58

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)

ST alkylene biscarbonate **electrolyte** lithium secondary **battery**; lithium manganate spinel cathode secondary **battery**; secondary lithium **battery** high voltage cycle characteristic

IT Carbonates, uses

RL: DEV (Device component use); USES (Uses)
 (alkylene biscarbonates, **electrolytes**; lithium secondary **batteries** containing alkylene biscarbonate **electrolytes** for excellent high-voltage cycle characteristics)

IT **Battery electrolytes**
 (lithium secondary **batteries** containing alkylene biscarbonate **electrolytes** for excellent high-voltage cycle characteristics)

IT Secondary **batteries**
 (lithium; lithium secondary **batteries** containing alkylene biscarbonate **electrolytes** for excellent high-voltage cycle characteristics)

IT 12031-75-3P, Lithium manganese nickel oxide ($LiMn1.5Ni0.5O4$)
 575458-25-2P

RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
 (cathode active material; lithium secondary **batteries** containing alkylene biscarbonate **electrolytes** for excellent high-voltage cycle characteristics)

IT 35466-87-6 88754-66-9 197370-32-4

RL: DEV (Device component use); USES (Uses)
 (**electrolyte**; lithium secondary **batteries** containing alkylene biscarbonate **electrolytes** for excellent high-voltage cycle characteristics)

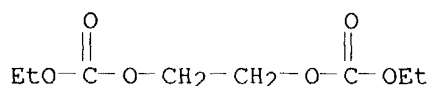
IT 35466-87-6

RL: DEV (Device component use); USES (Uses)

(**electrolyte**; lithium secondary **batteries** containing alkylene biscarbonate **electrolytes** for excellent high-voltage cycle characteristics)

RN 35466-87-6 HCAPLUS

CN Carbonic acid, 1,2-ethanediyl diethyl ester (9CI) (CA INDEX NAME)



L59 ANSWER 2 OF 12 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2003:437441 HCAPLUS

DN 139:278935

TI The role of Li-ion **battery electrolyte** reactivity in performance decline and self-discharge

AU Sloop, Steven E.; Kerr, John B.; Kinoshita, Kim

CS Lawrence Berkeley National Laboratory, Berkeley, CA, 94720, USA

SO Journal of Power Sources (2003), 119-121, 330-337

CODEN: JPSODZ; ISSN: 0378-7753

PB Elsevier Science B.V.

DT Journal

LA English

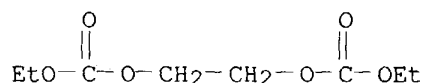
AB The purpose of this paper is to report on the reactivity of PF5 and EC/linear carbonates to understand the thermal and electrochem. decomposition reactions of LiPF6 in carbonate solvents and how these reactions give products that impact the performance of lithium-ion **batteries**. The behavior of other salts such as LiBF4 and LiTFSI are also examined. Solid LiPF6 is in equilibrium with solid LiF and PF5 gas. In the bulk **electrolyte**, the equilibrium can move toward products as PF5 reacts with the solvents. The Lewis acid property of the PF5 induces a ring-opening polymerization of the EC that is present in the **electrolyte** and can lead to PEO-like polymers. The polymerization is endothermic until 170° and is driven by CO2 evolution. Above this temperature the polymerization becomes exothermic and leads to a violent decomposition. The PEO-like polymers also react with the PF5 to yield further products that may be soluble in the **electrolyte** or participate in solid **electrolyte** interphase (SEI) formation in real cells. GPC anal. of the heated **electrolytes** indicates material with Mw up to 5000. More details on the polymerization reactions and further reactions with PF5 are reported. Transesterification and polymer products are observed in the **electrolytes** of cycled and aged Li-ion cells. Formation of polymer materials which are further cross-linked by reaction with acidic species leads to degradation of the transport properties of the **electrolyte** in the composite electrodes with the accompanying loss of power and energy d. Generation of CO2 in lithium-ion cells leads to saturation of the **electrolyte** and cessation of the polymerization reaction. However, CO2 is easily reduced at the anode to oxalate, carbonate and CO. The carbonate contributes to the SEI layer while the oxalate is sufficiently soluble to reach the cathode to be reoxidized to CO2 thus resulting in a shuttle mechanism that explains reversible self-discharge. Irreversible reduction of CO2 to carbonate and CO partially accounts for irreversible self-discharge.

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)

Section cross-reference(s): 35, 76

- ST Li ion salt **battery** secondary **electrolyte** reactivity
carbonate polymn; ethylene carbonate polyether LiPF₆ reaction lithium
discharge capacity secondary
- IT Decomposition
(electrochem.; role of Li-ion **battery electrolyte**
reactivity in performance decline and self-discharge)
- IT Electrodes
(glassy carbon; role of Li-ion **battery electrolyte**
reactivity in performance decline and self-discharge)
- IT Electric energy
(irreversible loss of; role of Li-ion **battery**
electrolyte reactivity in performance decline and
self-discharge)
- IT Polyethers, reactions
RL: FMU (Formation, unclassified); PRP (Properties); RCT (Reactant); FORM
(Formation, nonpreparative); RACT (Reactant or reagent)
(polycarbonate intermediates degrade to polyethers; role of Li-ion
battery electrolyte reactivity in performance decline
and self-discharge)
- IT Polymerization
(ring-opening; role of Li-ion **battery electrolyte**
reactivity in performance decline and self-discharge)
- IT **Battery electrolytes**
Cyclic voltammetry
Equilibrium
Thermal decomposition
Transesterification
(role of Li-ion **battery electrolyte** reactivity in
performance decline and self-discharge)
- IT Carbonates, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(role of Li-ion **battery electrolyte** reactivity in
performance decline and self-discharge)
- IT 62-76-0, Sodium oxalate
RL: FMU (Formation, unclassified); RCT (Reactant); FORM (Formation,
nonpreparative); RACT (Reactant or reagent)
(at carbon electrode; role of Li-ion **battery**
electrolyte reactivity in performance decline and
self-discharge)
- IT 193214-24-3, Aluminum cobalt lithium nickel oxide (Al_{0.05}Co_{0.15}LiNi_{0.80}2)
RL: DEV (Device component use); USES (Uses)
(cathode, from partially used 18650 **battery** cell; role of
Li-ion **battery electrolyte** reactivity in
performance decline and self-discharge)
- IT 88754-66-9
RL: ANT (Analyte); FMU (Formation, unclassified); ANST (Analytical study);
FORM (Formation, nonpreparative)
(di-Me carbonate dimer; role of Li-ion **battery**
electrolyte reactivity in performance decline and
self-discharge)
- IT 21324-40-3, Lithium hexafluorophosphate (LiPF₆)
RL: DEV (Device component use); FMU (Formation, unclassified); PEP
(Physical, engineering or chemical process); PYP (Physical process); RCT
(Reactant); FORM (Formation, nonpreparative); PROC (Process); RACT
(Reactant or reagent); USES (Uses)
(**electrolyte** solns. with carbonate solvents; role of Li-ion
battery electrolyte reactivity in performance decline
and self-discharge)
- IT 33454-82-9, Lithium trifluoromethane sulfonate

- RL: PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process)
 (electrolyte solns. with carbonate solvents; role of Li-ion battery electrolyte reactivity in performance decline and self-discharge)
- IT 616-38-6, Dimethyl carbonate
 RL: ANT (Analyte); DEV (Device component use); FMU (Formation, unclassified); RCT (Reactant); ANST (Analytical study); FORM (Formation, nonpreparative); RACT (Reactant or reagent); USES (Uses)
 (role of Li-ion battery electrolyte reactivity in performance decline and self-discharge)
- IT 96-49-1, Ethylene carbonate 623-53-0, Ethylmethyl carbonate
 RL: ANT (Analyte); DEV (Device component use); RCT (Reactant); ANST (Analytical study); RACT (Reactant or reagent); USES (Uses)
 (role of Li-ion battery electrolyte reactivity in performance decline and self-discharge)
- IT 105-58-8, Diethyl carbonate 35466-87-6 197370-32-4
 RL: ANT (Analyte); FMU (Formation, unclassified); ANST (Analytical study); FORM (Formation, nonpreparative)
 (role of Li-ion battery electrolyte reactivity in performance decline and self-discharge)
- IT 7647-19-0, Phosphorus fluoride (PF5)
 RL: CAT (Catalyst use); FMU (Formation, unclassified); RCT (Reactant); FORM (Formation, nonpreparative); RACT (Reactant or reagent); USES (Uses)
 (role of Li-ion battery electrolyte reactivity in performance decline and self-discharge)
- IT 7440-50-8, Copper, uses
 RL: DEV (Device component use); USES (Uses)
 (role of Li-ion battery electrolyte reactivity in performance decline and self-discharge)
- IT 554-13-2
 RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
 (role of Li-ion battery electrolyte reactivity in performance decline and self-discharge)
- IT 71-47-6, Formate ion, reactions 124-38-9, Carbon dioxide, reactions 338-70-5, reactions 630-08-0, Carbon monoxide, reactions 3812-32-6, Carbonate ion, reactions 7789-24-4, Lithium fluoride (LiF), reactions
 RL: FMU (Formation, unclassified); RCT (Reactant); FORM (Formation, nonpreparative); RACT (Reactant or reagent)
 (role of Li-ion battery electrolyte reactivity in performance decline and self-discharge)
- IT 90076-65-6, Lithium bis(trifluoromethanesulfonyl)imide
 RL: PEP (Physical, engineering or chemical process); PYP (Physical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
 (role of Li-ion battery electrolyte reactivity in performance decline and self-discharge)
- IT 112-73-2, Diethylene glycol dibutyl ether 14283-07-9 29935-35-1, Lithium hexafluoroarsenate (LiAsF6)
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (role of Li-ion battery electrolyte reactivity in performance decline and self-discharge)
- IT 35466-87-6
 RL: ANT (Analyte); FMU (Formation, unclassified); ANST (Analytical study); FORM (Formation, nonpreparative)
 (role of Li-ion battery electrolyte reactivity in performance decline and self-discharge)
- RN 35466-87-6 HCAPLUS
 CN Carbonic acid, 1,2-ethanediyl diethyl ester (9CI) (CA INDEX NAME)



RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L59 ANSWER 3 OF 12 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:446203 HCAPLUS
DN 137:35471
TI Polymer gel **electrolyte** secondary cell and electrical
double-layer capacitor
IN Yoshida, Hiroshi; Hata, Kimiyo; Maruo, Tatsuya; Sato, Takaya
PA Nisshinbo Industries, Inc., Japan
SO Eur. Pat. Appl., 34 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 1

applicant

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI EP 1213778	A2	20020612	EP 2001-310223	20011206
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2002175837	A2	20020621	JP 2000-371277	20001206
US 2002102464	A1	20020801	US 2001-2171	20011205
PRAI JP 2000-371277	A	20001206		
AB A polymer gel electrolyte includes an electrolyte solution composed of a plasticizer with at least two carbonate structures on the mol. and an electrolyte salt, in combination with a matrix polymer. Secondary batteries made with the polymer gel electrolyte can operate at a high capacitance and a high current, have a broad service temperature range and a high level of safety, and are thus particularly well-suited for use in such applications as lithium secondary cells and lithium ion secondary cells. Elec. double-layer capacitors made with the polymer gel electrolyte have a high output voltage, a large output current, a broad service temperature range and excellent safety.				
IC ICM H01M006-18				
CC ICS H01M006-22; H01M010-40; H01G009-02				
52-2 (Electrochemical , Radiational, and Thermal Energy Technology)				
Section cross-reference(s): 35, 38, 76				
ST polymer gel electrolyte lithium secondary battery ;				
elec double layer capacitor polymer gel electrolyte ; safety polymer gel electrolyte battery capacitor				
IT Alkali metal compounds				
RL: TEM (Technical or engineered material use); USES (Uses) (activation by; polymer gel electrolyte secondary cell and elec. double-layer capacitor)				
IT Capacitors				
(double layer; polymer gel electrolyte secondary cell and elec. double-layer capacitor)				
IT Polymer electrolytes				
(gel; polymer gel electrolyte secondary cell and elec. double-layer capacitor)				
IT Secondary batteries				
(lithium; polymer gel electrolyte secondary cell and elec.				

- double-layer capacitor)
- IT **Battery electrolytes**
 - Combustion
 - Conducting polymers
 - Ionic conductivity
 - Mesophase pitch
 - Plasticizers
 - Safety
 - (polymer gel **electrolyte** secondary cell and elec. double-layer capacitor)
- IT Rayon, processes
 - RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
 - (polymer gel **electrolyte** secondary cell and elec. double-layer capacitor)
- IT Alkali metal salts
 - Carbonaceous materials (technological products)
 - Fluoropolymers, uses
 - Oxides (inorganic), uses
 - Phosphonium compounds
 - Quaternary ammonium compounds, uses
 - Sulfides, uses
 - Transition metal salts
 - RL: DEV (Device component use); USES (Uses)
 - (polymer gel **electrolyte** secondary cell and elec. double-layer capacitor)
- IT Plastics, uses
 - RL: TEM (Technical or engineered material use); USES (Uses)
 - (thermoplastics; polymer gel **electrolyte** secondary cell and elec. double-layer capacitor)
- IT Polyurethanes, uses
 - RL: DEV (Device component use); USES (Uses)
 - (unsatd.; polymer gel **electrolyte** secondary cell and elec. double-layer capacitor)
- IT Lithium alloy, base
 - RL: DEV (Device component use); USES (Uses)
 - (polymer gel **electrolyte** secondary cell and elec. double-layer capacitor)
- IT 7440-44-0, Activated carbon, uses
 - RL: DEV (Device component use); USES (Uses)
 - (activated; polymer gel **electrolyte** secondary cell and elec. double-layer capacitor)
- IT 25014-41-9, Polyacrylonitrile
 - RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
 - (polymer gel **electrolyte** secondary cell and elec. double-layer capacitor)
- IT 7439-93-2, Lithium, uses 21324-40-3, Lithium hexafluorophosphate 437552-20-0
 - RL: DEV (Device component use); USES (Uses)
 - (polymer gel **electrolyte** secondary cell and elec. double-layer capacitor)
- IT 9002-89-5DP, Polyvinyl alcohol, cyanoethylated 9002-89-5DP, Polyvinyl alcohol, dihydroxypropylated 9004-64-2DP, Hydroxypropyl cellulose, cyanoethylated 25722-70-7DP, Polyglycidol, cyanoethylated 25722-70-7P, Polyglycidol 437552-21-1P 437552-22-2P 437552-23-3P
 - RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(polymer gel **electrolyte** secondary cell and elec.
double-layer capacitor)

IT 78-67-1, Azobisisobutyronitrile 26915-72-0, Methoxypolyethylene glycol
monomethacrylate
RL: MOA (Modifier or additive use); USES (Uses)
(polymer gel **electrolyte** secondary cell and elec.
double-layer capacitor)

IT 25766-14-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(polymer gel **electrolyte** secondary cell and elec.
double-layer capacitor)

IT 123-25-1, Diethyl succinate 96344-18-2 153550-33-5, Amberlite IRC-76
RL: TEM (Technical or engineered material use); USES (Uses)
(polymer gel **electrolyte** secondary cell and elec.
double-layer capacitor)

IT 437552-21-1P 437552-22-2P 437552-23-3P
RL: DEV (Device component use); SPN (Synthetic preparation); PREP
(Preparation); USES (Uses)
(polymer gel **electrolyte** secondary cell and elec.
double-layer capacitor)

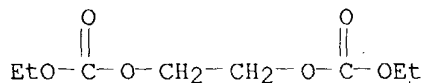
RN 437552-21-1 HCAPLUS

CN Carbonic acid, 1,2-ethanediyl diethyl ester, polymer with
 α -(2-methyl-1-oxo-2-propenyl)- ω -methoxypoly(oxy-1,2-
ethanediyl) (9CI) (CA INDEX NAME)

CM 1

CRN 35466-87-6

CMF C8 H14 O6

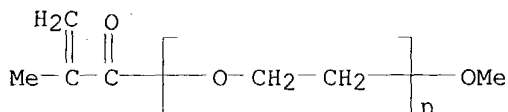


CM 2

CRN 26915-72-0

CMF (C2 H4 O)_n C5 H8 O2

CCI PMS



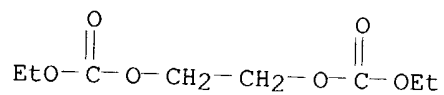
RN 437552-22-2 HCAPLUS

CN Carbonic acid, diethyl ester, polymer with 1,2-ethanediyl bis(ethyl
carbonate), 1,1'-methylenebis[4-isocyanatobenzene], methyloxirane,
 α -(2-methyl-1-oxo-2-propenyl)- ω -methoxypoly(oxy-1,2-
ethanediyl) and oxirane (9CI) (CA INDEX NAME)

CM 1

CRN 35466-87-6

CMF C8 H14 O6

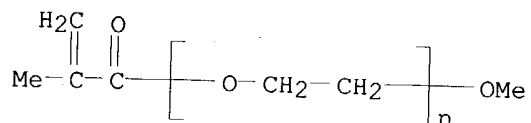


CM 2

CRN 26915-72-0

CMF (C2 H4 O)_n C5 H8 O2

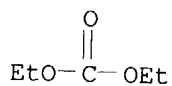
CCI PMS



CM 3

CRN 105-58-8

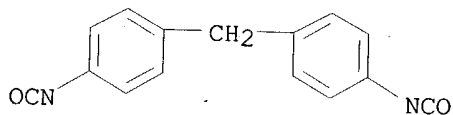
CMF C5 H10 O3



CM 4

CRN 101-68-8

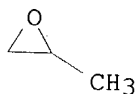
CMF C15 H10 N2 O2



CM 5

CRN 75-56-9

CMF C3 H6 O



CM 6

CRN 75-21-8

CMF C2 H4 O



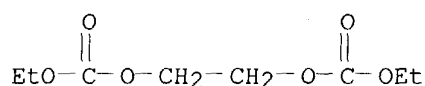
RN 437552-23-3 HCAPLUS

CN Cellulose, 2-cyanopropyl ether, polymer with 1,2-ethanediyl bis(ethyl carbonate) and α -(2-methyl-1-oxo-2-propenyl)- ω -methoxypoly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

CM 1

CRN 35466-87-6

CMF C8 H14 O6

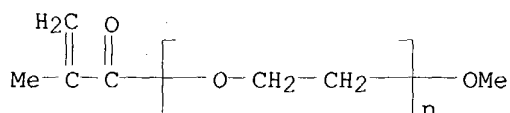


CM 2

CRN 26915-72-0

CMF (C2 H4 O)_n C5 H8 O2

CCI PMS



CM 3

CRN 60001-05-0

CMF C4 H7 N O . x Unspecified

CM 4

CRN 9004-34-6

CMF Unspecified

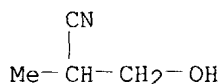
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 5

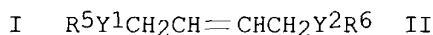
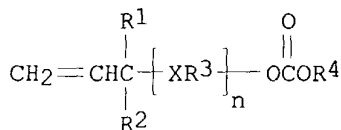
CRN 2567-01-3

CMF C4 H7 N O

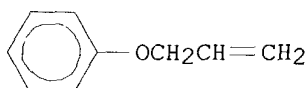


L59 ANSWER 4 OF 12 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2002:253400 HCAPLUS
 DN 136:297370
 TI Nonaqueous **electrolyte** solution and secondary **battery**
 using the **electrolyte** solution
 IN Yamada, Manabu; Kubota, Naohiro; Takeuchi, Yasunori
 PA Denso Co., Ltd., Japan; Asahi Denka Kogyo K. K.
 SO Jpn. Kokai Tokkyo Koho, 11 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002100402	A2	20020405	JP 2000-291147	20000925
PRAI	JP 2000-291147		20000925		
OS	MARPAT 136:297370				
GI					



III



IV

AB The **electrolyte** solution contains 0.1-3 volume% alkene derivs. I, II, III, and/or IV; where the R's are H or (substituted) organic groups, X, Y1, and Y2 are -O-, -COO-, or -OCOO- and ≥ 1 of Y1 and Y2 be a -OCOO- group. The **electrolyte** solution contains cyclic or linear carbonate esters, and may also contain (cyclic) phosphate esters. The **electrolyte** salt is a Li salt.

IC ICM H01M010-40

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)

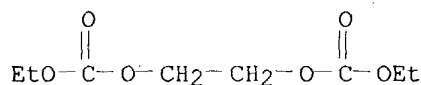
ST secondary lithium **battery electrolyte** soln alkene deriv; phosphate ester secondary lithium **battery electrolyte** soln

IT **Battery electrolytes**

(nonaq. **electrolyte** solns. containing alkene derivs. and phosphate esters for secondary lithium **batteries**)

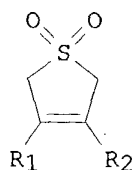
IT 78-40-0, Triethyl phosphate 96-49-1, Ethylene carbonate 105-58-8,
 Diethyl carbonate 1469-70-1 1746-13-0 5332-81-0 21324-40-3,
 Lithium hexafluorophosphate 30714-78-4 **35466-87-6** 80054-75-7

RL: DEV (Device component use); USES (Uses)
 (nonaq. **electrolyte** solns. containing alkene derivs. and
 phosphate esters for secondary lithium **batteries**)
 IT 35466-87-6
 RL: DEV (Device component use); USES (Uses)
 (nonaq. **electrolyte** solns. containing alkene derivs. and
 phosphate esters for secondary lithium **batteries**)
 RN 35466-87-6 HCAPLUS
 CN Carbonic acid, 1,2-ethanediyl diethyl ester (9CI) (CA INDEX NAME)

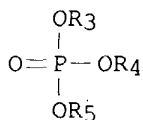


L59 ANSWER 5 OF 12 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2001:903575 HCAPLUS
 DN 136:40184
 TI Nonaqueous **electrolyte** solution and secondary **battery**
 using the solution
 IN Yamada, Manabu; Kubota, Naohiro
 PA Denso Co., Ltd., Japan; Asahi Denka Kogyo K. K.
 SO Jpn. Kokai Tokkyo Koho, 10 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

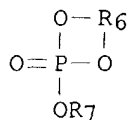
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001345120	A2	20011214	JP 2000-162262	20000531
PRAI	JP 2000-162262		20000531		
OS	MARPAT 136:40184				
GI					



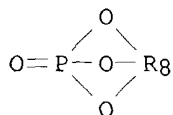
I



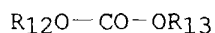
II



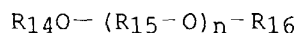
III



IV

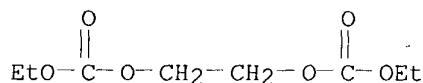


V



VI

- AB The **electrolyte** solution has an **electrolyte** salt dissolved in an org solvent and contains a sulfolane I [R1, R2 = H, halogen, (halogenated) C1-4 alkyl groups] and ≥1 of II, III, and IV (R3-5, R7 = C1-8 alkyl, alkenyl, alkynyl groups, ether bond containing alkyl groups, or halogenated alkyl groups; R6 = C1-4 alkylene, alkenylene, alkynylene group, ether bond containing alkylene group, or halogenated alkylene group; R8 = C3-18 trivalent alc. residue). The **electrolyte** solns. may also contain carbonate esters, diol carbonate ester derivs., and oxyalkylene ethers.
- IC ICM H01M010-40
- CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
- ST secondary **battery electrolyte** org solvent additive; sulfolane secondary **battery** nonaq **electrolyte** soln; phosphate ester secondary **battery** nonaq **electrolyte** soln
- IT **Battery electrolytes**
(**electrolyte** solns. containing sulfolane derivs. and phosphate esters and other additives for secondary lithium **batteries**)
- IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 21324-40-3, Lithium hexafluorophosphate 30714-78-4
RL: DEV (Device component use); USES (Uses)
(**electrolyte** solns. containing sulfolane derivs. and phosphate esters and other additives for secondary lithium **batteries**)
- IT 77-79-2 78-40-0, Triethyl phosphate **35466-87-6** 80054-75-7
RL: MOA (Modifier or additive use); USES (Uses)
(**electrolyte** solns. containing sulfolane derivs. and phosphate esters and other additives for secondary lithium **batteries**)
- IT **35466-87-6**
RL: MOA (Modifier or additive use); USES (Uses)
(**electrolyte** solns. containing sulfolane derivs. and phosphate esters and other additives for secondary lithium **batteries**)
- RN 35466-87-6 HCAPLUS
- CN Carbonic acid, 1,2-ethanediyl diethyl ester (9CI) (CA INDEX NAME)

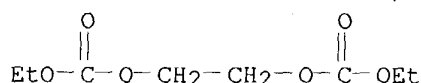


L59 ANSWER 6 OF 12 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2000:665881 HCAPLUS
DN 133:254967
TI Nonaqueous **electrolyte** for use in secondary **battery**
IN Nakano, Tomoharu; Miyazaki, Tadakazu; Ogiso, Naohito
PA Sanyo Chemical Industries Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000260467	A2	20000922	JP 1999-60625	19990308
PRAI	JP 1999-60625		19990308		
OS	MARPAT 133:254967				
AB	The nonaq. electrolyte for use in the secondary battery				

comprises ≥ 2 compds. having a carbonate structure and a general formula $R1OC(O)O[(X)m(Q)p(Y)n]jOC(O)R2$ in its mol. where R1 or R2 is C1-10 hydrocarbon having amino, nitro, cyano, carbonyl, or ether group, X or Y is C1-20 alkylene, Q is -OCO-, -CO2-, -CONR3-, -NR4CO-, -O-, or phenylene group, R3 or R4 is H or C1-4 alkyl, and m, p, n, or j is 0 or integer 1-10, and, in addition, any 2 groups from R1, R2, X, or Y is allow to form ring. Quality of elec. **battery** such as discharge-charge efficiency, energy d., output d. and storage life is not impaired in a **battery** using the fire-resistant nonaq. **electrolyte**.

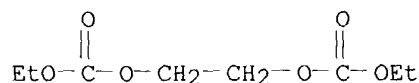
IC ICM H01M010-40
 CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
 ST nonaq **electrolyte** secondary **battery** carbonate group
 IT **Battery electrolytes**
 (nonaq. **electrolyte** for use in secondary **battery**)
 IT Secondary **batteries**
 (nonaq. **electrolyte**; nonaq. **electrolyte** for use in secondary **battery**)
 IT 96-49-1, Ethylenecarbonate 105-58-8, Diethylcarbonate 6947-11-1
 14283-07-9, Lithium tetrafluoroborate 21324-40-3, Lithium hexafluorophosphate 35466-87-6 295316-59-5
 RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
 (nonaq. **electrolyte** for use in secondary **battery** containing)
 IT 35466-87-6
 RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
 (nonaq. **electrolyte** for use in secondary **battery** containing)
 RN 35466-87-6 HCAPLUS
 CN Carbonic acid, 1,2-ethanediyl diethyl ester (9CI) (CA INDEX NAME)



L59 ANSWER 7 OF 12 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2000:470532 HCAPLUS
 DN 133:61392
 TI Nonaqueous **electrolyte** salts for nonaqueous **electrolyte** secondary **batteries**
 IN Yamada, Manabu; Kubota, Naohiro; Oikawa, Tomoyuki; Takeuchi, Yasunori
 PA Denso Corporation, Japan
 SO Fr. Demande, 69 pp.
 CODEN: FRXXBL
 DT Patent
 LA French
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	FR 2784505	A1	20000414	FR 1999-12646	19991011
	JP 2001023691	A2	20010126	JP 1999-198680	19990713
	JP 2000182669	A2	20000630	JP 1999-257574	19990910
	JP 2001085056	A2	20010330	JP 1999-256672	19990910
	US 6566015	B1	20030520	US 1999-414864	19991008
PRAI	JP 1998-288065	A	19981009		
	JP 1999-198680	A	19990713		

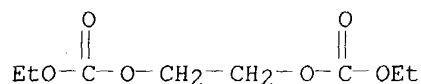
JP 1999-256672 A 19990910
 JP 1999-257574 A 19990910
 OS MARPAT 133:61392
 AB A **battery** electrolytic salt is produced by dissoln. of an electrolytic salt support in an organic solvent. The organic solvent contains (1) a cyclic carbonate compound, (2) ≥ 1 alkyl monocarbonate $R1OC(:O)OR2$ ($R1, R2 = C \geq 3$ alkyl (same or different)) and an alkylene bicarbonate $R3OC(:O)OR4OC(:O)R5$ ($R3, R5 = C1-4$ alkyl (same or different); $R4 =$ branched or straight $C1-3$ alkylene), and (3) an organic P compound. The electrolytic salts can be inorg. salts $LiPF_6$, $LiBF_4$, $LiClO_4$, $LiAsF_6$ or their derivs. or organic salts $LiSO_3CF_3$, $LiC(SO_2CF_3)_3$, and $LiN(SO_2CF_3)_2$ or their derivs. The salts are suitable for **battery electrolytes** used in elec. vehicles and portable electronic equipment.
 IC ICM H01M010-40
 CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
 Section cross-reference(s): 76
 ST **battery electrolyte**
 IT **Battery electrolytes**
 (nonaq. **electrolyte** salts for nonaq.)
 IT 7791-03-9, Lithium perchlorate ($LiClO_4$) 14283-07-9, Lithium tetrafluoroborate ($LiBF_4$) 21324-40-3, Lithium hexafluorophosphate ($LiPF_6$) 29935-35-1, Lithium hexafluoroarsenate ($LiAsF_6$) 33454-82-9 90076-65-6 132404-42-3
 RL: TEM (Technical or engineered material use); USES (Uses)
 (nonaq. **electrolyte** salts for nonaq. **electrolyte** for secondary **batteries**)
 IT 78-40-0, Triethyl phosphate 96-49-1, Ethylene carbonate. 623-53-0, Ethyl methyl carbonate 629-14-1 6482-34-4, Diisopropyl carbonate 7570-02-7 30714-78-4, Ethyl butyl carbonate **35466-87-6** 80054-75-7 173265-25-3
 RL: TEM (Technical or engineered material use); USES (Uses)
 (solvent for nonaq. **electrolyte** for secondary **batteries**)
 IT **35466-87-6**
 RL: TEM (Technical or engineered material use); USES (Uses)
 (solvent for nonaq. **electrolyte** for secondary **batteries**)
 RN 35466-87-6 HCAPLUS
 CN Carbonic acid, 1,2-ethanediyl diethyl ester (9CI) (CA INDEX NAME)



L59 ANSWER 8 OF 12 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2000:362796 HCAPLUS
 DN 133:7051
 TI Secondary nonaqueous **electrolyte batteries** using phosphate esters and halohydrocarbons
 IN Shinoda, Naoki; Kita, Fusaji
 PA Hitachi Maxell, Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 7 pp.
 CODEN: JKXXAF
 DT Patent

LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000149984	A2	20000530	JP 1998-317059	19981109
PRAI	JP 1998-317059		19981109		
AB	The batteries contain phosphate esters and CaHbFcXd (X = halogen except F; $3 \leq a \leq 10$; $1 \leq b \leq a$; $a \leq c \leq 2a$; $0 \leq d \leq c$) in electrolyte solns. The batteries are fireproof and show good load characteristics.				
IC	ICM H01M010-40				
CC	52-2 (Electrochemical , Radiational, and Thermal Energy Technology)				
ST	battery electrolyte fireproof phosphate halohydrocarbon; nonaq electrolyte battery phosphate hydrocarbon safety				
IT	Hydrocarbons, uses RL: DEV (Device component use); USES (Uses) (fluoro; secondary batteries using fireproof nonaq. electrolyte solns. containing phosphate esters and halohydrocarbons)				
IT	Carbonates, uses RL: DEV (Device component use); USES (Uses) (in electrolyte solns.; secondary batteries using fireproof nonaq. electrolyte solns. containing phosphate esters and halohydrocarbons)				
IT	Secondary batteries (lithium; secondary batteries using fireproof nonaq. electrolyte solns. containing phosphate esters and halohydrocarbons)				
IT	Battery electrolytes Fireproofing agents Safety (secondary batteries using fireproof nonaq. electrolyte solns. containing phosphate esters and halohydrocarbons)				
IT	21324-40-3, Lithium hexafluorophosphate RL: DEV (Device component use); USES (Uses) (electrolyte ; secondary batteries using fireproof nonaq. electrolyte solns. containing phosphate esters and halohydrocarbons)				
IT	96-49-1, Ethylene carbonate RL: DEV (Device component use); USES (Uses) (in electrolyte solns.; secondary batteries using fireproof nonaq. electrolyte solns. containing phosphate esters and halohydrocarbons)				
IT	512-56-1, Trimethyl phosphate 35466-87-6 37830-90-3 138495-42-8, Vertrel XF 141563-84-0, AK 225 RL: DEV (Device component use); USES (Uses) (secondary batteries using fireproof nonaq. electrolyte solns. containing phosphate esters and halohydrocarbons)				
IT	35466-87-6 RL: DEV (Device component use); USES (Uses) (secondary batteries using fireproof nonaq. electrolyte solns. containing phosphate esters and halohydrocarbons)				
RN	35466-87-6 HCAPLUS				
CN	Carbonic acid, 1,2-ethanediyl diethyl ester (9CI) (CA INDEX NAME)				



L59 ANSWER 9 OF 12 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2000:223903 HCAPLUS

DN 132:239460

TI Secondary nonaqueous **electrolyte batteries**

IN Shinoda, Naoki

PA Hitachi Maxell, Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000100470	A2	20000407	JP 1998-272651	19980928
PRAI	JP 1998-272651		19980928		

AB The **batteries** use **electrolyte** solvents containing phosphate esters and ≥ 2 compds selected from CaHbXcSdOe [X = halogen, $2 \leq a \leq 8$, $b \leq a$, $1 \leq c \leq (2a+2)$, $d \leq 1$, and $1 \leq e \leq 4$], b. $25-150^\circ$, and CfHgX3N [$3 \leq f \leq 8$, $g \leq f$, $6 \leq j \leq (2f+2)$], b. $25-150^\circ$.

IC ICM H01M010-40

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)

ST **battery electrolyte** solvent phosphate ester additive; sulfur compd **battery electrolyte** solvent; halocarbon compd **battery electrolyte** solvent; oxygen compd **battery electrolyte** nonaq solvent

IT **Battery electrolytes**

(nonaq. **electrolyte** solvents containing phosphate esters and halocarbon compds. for secondary lithium **batteries**)

IT 356-24-1, Methyl heptafluorobutyrate 359-70-6, Tris(pentafluoroethyl) amine 512-56-1, Trimethyl phosphate 2196-04-5, Ethylene methyl phosphate 21324-40-3, Lithium hexafluorophosphate **35466-87-6**
 RL: DEV (Device component use); USES (Uses)

(nonaq. **electrolyte** solvents containing phosphate esters and halocarbon compds. for secondary lithium **batteries**)

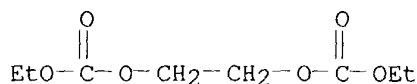
IT **35466-87-6**

RL: DEV (Device component use); USES (Uses)

(nonaq. **electrolyte** solvents containing phosphate esters and halocarbon compds. for secondary lithium **batteries**)

RN 35466-87-6 HCAPLUS

CN Carbonic acid, 1,2-ethanediyl diethyl ester (9CI) (CA INDEX NAME)



L59 ANSWER 10 OF 12 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1999:417548 HCAPLUS

DN 131:61130

TI Organic **electrolyte** secondary **batteries** with high capacity and safety

IN Ozaki, Junko; Shinoda, Naoki

PA Hitachi Maxell, Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11176471	A2	19990702	JP 1998-248896	19980903
PRAI	JP 1997-291593		19971007		

AB Title **batteries** use anode active mass of oxides, sulfites, or nitrides of Group IIIA-VA (semi)metals and phosphate triesters and cyclic carbonates or carbonate ester polymers.

IC ICM H01M010-40

ICS H01M004-02; H01M004-48; H01M004-58

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)

ST capacity **battery** anode silicone oxide; **electrolyte battery** triethyl phosphate carbonate ester; safety **battery** electrode triethyl phosphate

IT Group VA element chalcogenides

RL: DEV (Device component use); USES (Uses)

(oxides; secondary **batteries** using anode active mass of oxides, sulfites, or nitrides of Group IIIA-VA (semi)metals for high capacity and safety)

IT **Battery** anodes

Battery electrodes

(secondary **batteries** using anode active mass of oxides, sulfites, or nitrides of Group IIIA-VA (semi)metals for high capacity and safety)

IT Carbonate esters

Group IIIA element nitrides

Group IIIA element oxides

Group IVA element oxides

RL: DEV (Device component use); USES (Uses)

(secondary **batteries** using anode active mass of oxides, sulfites, or nitrides of Group IIIA-VA (semi)metals for high capacity and safety)

IT Group IVA element compounds

Group VA element compounds

RL: DEV (Device component use); USES (Uses)

(sulfides or nitrides; secondary **batteries** using anode active mass of oxides, sulfites, or nitrides of Group IIIA-VA (semi)metals for high capacity and safety)

IT Group IIIA element compounds

RL: DEV (Device component use); USES (Uses)

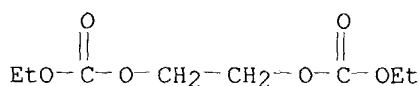
(sulfides; secondary **batteries** using anode active mass of oxides, sulfites, or nitrides of Group IIIA-VA (semi)metals for high capacity and safety)

IT Phosphates, uses

RL: DEV (Device component use); USES (Uses)

(triesters; secondary **batteries** using anode active mass of oxides, sulfites, or nitrides of Group IIIA-VA (semi)metals for high capacity and safety)

capacity and safety)
 IT 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate 512-56-1,
 Trimethyl phosphate 15773-66-7 **35466-87-6** 113443-18-8,
 Silicon monoxide
 RL: DEV (Device component use); USES (Uses)
 (secondary **batteries** using anode active mass of oxides,
 sulfites, or nitrides of Group IIIA-VA (semi)metals for high capacity
 and safety)
 IT **35466-87-6**
 RL: DEV (Device component use); USES (Uses)
 (secondary **batteries** using anode active mass of oxides,
 sulfites, or nitrides of Group IIIA-VA (semi)metals for high capacity
 and safety)
 RN 35466-87-6 HCAPLUS
 CN Carbonic acid, 1,2-ethanediyl diethyl ester (9CI) (CA INDEX NAME)



L59 ANSWER 11 OF 12 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1999:417547 HCAPLUS
 DN 131:61129

TI Organic **electrolyte** secondary **batteries** with high
 capacity and improved safety
 IN Ozaki, Junko; Shinoda, Naoki
 PA Hitachi Maxell, Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 8 pp.
 CODEN: JKXXAF

DT Patent
 LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11176470	A2	19990702	JP 1998-248895	19980903
PRAI	JP 1997-291594		19971007		

AB Title **batteries** use anode active mass of Si, Sn, Pb, or their
 alloys and organic **electrolytes** containing phosphate triesters and
 cyclic carbonate esters or carbonate ester polymers. The
batteries do not ignite even when internal short circuits are
 generated or heat treatment at 100° is carried out.

IC ICM H01M010-40

ICS H01M004-02; H01M004-38

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy
 Technology)

ST **battery electrolyte** phosphate triester cyclic
 carbonate; silicon anode **battery** capacity; safety
battery electrolyte phosphate triester

IT Carbonate esters

RL: DEV (Device component use); USES (Uses)

(cyclic; secondary **batteries** using anode active masses of Si,
 Sn, Pb, or their alloys and **electrolytes** for high capacity
 and improved safety)

IT **Battery** anodes

Battery electrolytes
 Safety

Secondary **batteries**

(secondary **batteries** using anode active masses of Si, Sn, Pb, or their alloys and **electrolytes** for high capacity and improved safety)

IT Phosphates, uses

RL: DEV (Device component use); USES (Uses)

(triesters; secondary **batteries** using anode active masses of Si, Sn, Pb, or their alloys and **electrolytes** for high capacity and improved safety)

IT Lead alloy, base

Silicon alloy, base

Tin alloy, base

RL: DEV (Device component use); USES (Uses)

(secondary **batteries** using anode active masses of Si, Sn, Pb, or their alloys and **electrolytes** for high capacity and improved safety)

IT 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate 512-56-1, Trimethyl phosphate 7439-92-1, Lead, uses 7440-21-3, Silicon, uses 7440-31-5, Tin, uses **35466-87-6**

RL: DEV (Device component use); USES (Uses)

(secondary **batteries** using anode active masses of Si, Sn, Pb, or their alloys and **electrolytes** for high capacity and improved safety)

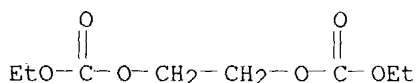
IT **35466-87-6**

RL: DEV (Device component use); USES (Uses)

(secondary **batteries** using anode active masses of Si, Sn, Pb, or their alloys and **electrolytes** for high capacity and improved safety)

RN 35466-87-6 HCAPLUS

CN Carbonic acid, 1,2-ethanediyl diethyl ester (9CI) (CA INDEX NAME)



L59 ANSWER 12 OF 12 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1996:567240 HCAPLUS

DN 125:200806

TI Organic liquid **electrolyte** plasticizers for **electrolytes** having enhanced ambient temperature conductivity

IN Ventura, Susanna C.; Narang, Subhash C.; Hum, Georgina; Liu, Peikang; Ranganathan, Prema; Sun, Luying

PA Sri International, USA

SO PCT Int. Appl., 57 pp.

CODEN: PIXXD2

DT Patent

LA English

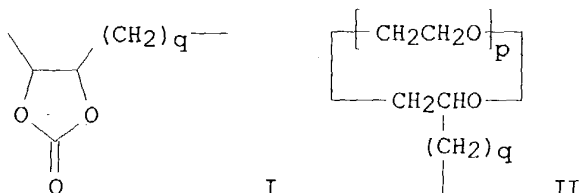
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9621639	A1	19960718	WO 1996-US183	19960104
W: CA, JP				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
CA 2210126	AA	19960718	CA 1996-2210126	19960104
EP 802898	A1	19971029	EP 1996-905118	19960104
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE				

KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505

JP 10512390	T2	19981124	JP 1996-521754	19960104
US 5731104	A	19980324	US 1997-807215	19970228
US 6015638	A	20000118	US 1997-925456	19970908
PRAI US 1995-372193		19950113		
WO 1996-US183		19960104		
US 1997-807215		19970228		

GI



- AB The plasticizers are RO(OC2R14)a(CO)b[O(X)cR2(Z)(R3)(X)cOCO]l(OC2R14)aOR, where R is independently selected from alkyl, (CO)OR4, (CrH2r)t(OC2R14)aOR4, I, and II; R1 is independently selected from H, alkyl, aryl, alkenyl, F, and fluorinated alkyl; R2 is alkylene or (CrH2r)t(OC2R14)a; R4 is H or alkyl; X is lower alkylene; R3 is selected from H, aryl, and alkyl; Z is selected from H and CH2O(CO)OR; a, c, l, r, and t are integers of 0-10 inclusive, b is 0, 1, or 2; p is an integer of 1-5 inclusive; and q is an integer of 1-6 inclusive. These and addnl. defined plasticizers and conductive compns. and films containing them are used in solid-state **batteries**, fuel cells, sensors, supercapacitors, electrochromic devices, etc.
- IC ICM C07C069-96
ICS C07D317-36; C07D323-00; H01B001-12; H01H010-40
- CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 35, 38, 59, 74, 76
- ST **battery liq electrolyte** plasticizer; fuel cell liq **electrolyte** plasticizer; sensor liq **electrolyte** plasticizer; supercapacitor liq **electrolyte** plasticizer; electrochromic device liq **electrolyte** plasticizer
- IT **Battery electrolytes**
Fuel-cell **electrolytes**
Sensors
(organic liquid **electrolyte** plasticizers for **electrolytes** having enhanced ambient temperature conductivity)
- IT Electric capacitors
(super; organic liquid **electrolyte** plasticizers for **electrolytes** having enhanced ambient temperature conductivity)
- IT Optical imaging devices
(electrochromic, organic liquid **electrolyte** plasticizers for **electrolytes** having enhanced ambient temperature conductivity)
- IT 78-39-7 626-84-6 2049-74-3 29536-36-5 87292-23-7 88754-66-9
103924-88-5 116146-29-3 116170-01-5 151801-15-9 167951-82-8
167951-83-9 181044-06-4 181044-07-5 181044-08-6 181044-09-7
181044-10-0
RL: DEV (Device component use); USES (Uses)
(organic liquid **electrolyte** plasticizers for **electrolytes** having enhanced ambient temperature conductivity)
- IT 29536-37-6P **35466-87-6P**
RL: DEV (Device component use); SPN (Synthetic preparation); PREP

(Preparation); USES (Uses)
(organic liquid **electrolyte** plasticizers for **electrolytes**
having enhanced ambient temperature conductivity)

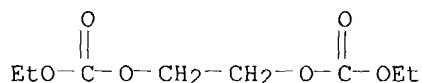
IT 35466-87-6P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP
(Preparation); USES (Uses)

(organic liquid **electrolyte** plasticizers for **electrolytes**
having enhanced ambient temperature conductivity)

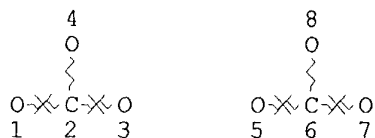
RN 35466-87-6 HCAPLUS

CN Carbonic acid, 1,2-ethanediyl diethyl ester (9CI) (CA INDEX NAME)



=> => D QUE

L2 17 SEA FILE=REGISTRY ABB=ON (25722-70-7/BI OR 9002-89-5/BI OR
123-25-1/BI OR 153550-33-5/BI OR 21324-40-3/BI OR 25014-41-9/BI
OR 25766-14-7/BI OR 26915-72-0/BI OR 437552-20-0/BI OR
437552-21-1/BI OR 437552-22-2/BI OR 437552-23-3/BI OR 7439-93-2
/BI OR 7440-44-0/BI OR 78-67-1/BI OR 9004-64-2/BI OR 96344-18-2
/BI)
L3 STR



NODE ATTRIBUTES:

NSPEC	IS	RC	AT	1
NSPEC	IS	RC	AT	2
NSPEC	IS	RC	AT	3
NSPEC	IS	RC	AT	5
NSPEC	IS	RC	AT	6
NSPEC	IS	RC	AT	7

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 8

STEREO ATTRIBUTES: NONE

L5	14251	SEA FILE=REGISTRY SSS FUL L3
L6	66509	SEA FILE=REGISTRY ABB=ON PUR/PCT
L7	3	SEA FILE=REGISTRY ABB=ON L2 AND L6
L8	294092	SEA FILE=REGISTRY ABB=ON PACR/PCT
L9	5	SEA FILE=REGISTRY ABB=ON L8 AND L2
L10	12588	SEA FILE=REGISTRY ABB=ON L6 AND L8
L11	55	SEA FILE=REGISTRY ABB=ON L5 AND L6
L14	12510	SEA FILE=HCAPLUS ABB=ON L5 - <i>dicarbonate</i>
L16	8	SEA FILE=HCAPLUS ABB=ON L14 AND GEL(5A) ELECTROLYTE?
L17	5105	SEA FILE=HCAPLUS ABB=ON L10

L18	38	SEA FILE=HCAPLUS ABB=ON	L14 AND L17
L19	1	SEA FILE=HCAPLUS ABB=ON	L18 AND ELECTROLYTE?
L20	1	SEA FILE=HCAPLUS ABB=ON	L18 AND BATTER?
L21	38449	SEA FILE=HCAPLUS ABB=ON	L6 <i>PUR</i>
L22	177	SEA FILE=HCAPLUS ABB=ON	L14 AND L21
L23	2	SEA FILE=HCAPLUS ABB=ON	L22 AND (ELECTROLYTE? OR BATTER?)
L24	516	SEA FILE=HCAPLUS ABB=ON	L14 AND (?URETHANE? OR ?ISOCYANT?)
L25	8	SEA FILE=HCAPLUS ABB=ON	L24 AND (ELECTROLYTE? OR BATTER?)
L26	696	SEA FILE=HCAPLUS ABB=ON	L14 AND (?URETHANE? OR ?ISOCYANAT?)
L27	13	SEA FILE=HCAPLUS ABB=ON	L26 AND (ELECTROLYTE? OR BATTER?)
L28	29	SEA FILE=HCAPLUS ABB=ON	L11
L29	1	SEA FILE=HCAPLUS ABB=ON	L28 AND (ELECTROLYTE? OR BATTER?)
L30	1	SEA FILE=HCAPLUS ABB=ON	L28 AND ELECTROCHEM?/SC,SX
L31	20	SEA FILE=HCAPLUS ABB=ON	L16 OR L19 OR L20 OR L23 OR L25 OR L27 OR L29 OR L30
L32	14753	SEA FILE=HCAPLUS ABB=ON	L7 OR L9 - <i>applicant</i>
L33	34	SEA FILE=HCAPLUS ABB=ON	L14 AND L32
L34	3	SEA FILE=HCAPLUS ABB=ON	L33 AND ELECTROCHEM?/SC,SX
L35	4	SEA FILE=HCAPLUS ABB=ON	L33 AND (ELECTROLYTE? OR BATTER?)
L36	22	SEA FILE=HCAPLUS ABB=ON	L31 OR L34 OR L35
L38	6627	SEA FILE=REGISTRY ABB=ON	9004-34-6/CRN
L39	1	SEA FILE=REGISTRY ABB=ON	9004-64-2
L40	19075	SEA FILE=REGISTRY ABB=ON	75-56-9/CRN
L42	23908	SEA FILE=REGISTRY ABB=ON	75-21-8/CRN
L43	17712	SEA FILE=REGISTRY ABB=ON	101-68-8/CRN
L44	14351	SEA FILE=REGISTRY ABB=ON	L6 AND L43
L45	6399	SEA FILE=REGISTRY ABB=ON	L6 AND (L38 OR L40 OR L42)
L46	14112	SEA FILE=HCAPLUS ABB=ON	L44
L47	7675	SEA FILE=HCAPLUS ABB=ON	L39
L48	4596	SEA FILE=HCAPLUS ABB=ON	L45
L49	24	SEA FILE=HCAPLUS ABB=ON	L14 AND L46
L50	24	SEA FILE=HCAPLUS ABB=ON	L14 AND (L47 OR L48)
L51	47	SEA FILE=HCAPLUS ABB=ON	L49 OR L50
L52	2	SEA FILE=HCAPLUS ABB=ON	L51 AND (ELECTROCHEM?/SC,SX OR ELECTROLYTE? OR BATTER?)
L54	22	SEA FILE=HCAPLUS ABB=ON	L36 OR L52
L55	1	SEA FILE=REGISTRY ABB=ON	35466-87-6
L56	4	SEA FILE=REGISTRY ABB=ON	35466-87-6/CRN
L57	5	SEA FILE=REGISTRY ABB=ON	L55 OR L56
L58	18	SEA FILE=HCAPLUS ABB=ON	L57
L59	12	SEA FILE=HCAPLUS ABB=ON	L58 AND (ELECTROCHEM?/SC,SX OR ELECTROLYTE? OR BATTER?)
L60	21	SEA FILE=HCAPLUS ABB=ON	L54 NOT L59
L61	1	SEA FILE=HCAPLUS ABB=ON	L54 NOT L60

=> D L61 ALL HITSTR

L61 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2002:446203 HCAPLUS
 DN 137:35471
 ED Entered STN: 13 Jun 2002
 TI Polymer **gel electrolyte** secondary cell and electrical double-layer capacitor
 IN Yoshida, Hiroshi; Hata, Kimiyo; Maruo, Tatsuya; Sato, Takaya
 PA Nisshinbo Industries, Inc., Japan
 SO Eur. Pat. Appl., 34 pp.
 CODEN: EPXXDW
 DT Patent

applicant

KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505

LA English
 IC ICM H01M006-18
 ICS H01M006-22; H01M010-40; H01G009-02
 CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
 Section cross-reference(s): 35, 38, 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1213778	A2	20020612	EP 2001-310223	20011206
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	JP 2002175837	A2	20020621	JP 2000-371277	20001206
	US 2002102464	A1	20020801	US 2001-2171	20011205
PRAI	JP 2000-371277	A	20001206		

AB A polymer **gel electrolyte** includes an **electrolyte** solution composed of a plasticizer with at least two carbonate structures on the mol. and an **electrolyte** salt, in combination with a matrix polymer. Secondary **batteries** made with the polymer **gel electrolyte** can operate at a high capacitance and a high current, have a broad service temperature range and a high level of safety, and are thus particularly well-suited for use in such applications as lithium secondary cells and lithium ion secondary cells. Elec. double-layer capacitors made with the polymer **gel electrolyte** have a high output voltage, a large output current, a broad service temperature range and excellent safety.

ST polymer **gel electrolyte** lithium secondary **battery**; elec double layer capacitor polymer **gel electrolyte**; safety polymer **gel electrolyte battery** capacitor

IT Alkali metal compounds
 RL: TEM (Technical or engineered material use); USES (Uses)
 (activation by; polymer **gel electrolyte** secondary cell and elec. double-layer capacitor)

IT Capacitors
 (double layer; polymer **gel electrolyte** secondary cell and elec. double-layer capacitor)

IT Polymer **electrolytes**
 (gel; polymer **gel electrolyte** secondary cell and elec. double-layer capacitor)

IT Secondary **batteries**
 (lithium; polymer **gel electrolyte** secondary cell and elec. double-layer capacitor)

IT **Battery electrolytes**
 Combustion
 Conducting polymers
 Ionic conductivity
 Mesophase pitch
 Plasticizers
 Safety
 (polymer **gel electrolyte** secondary cell and elec. double-layer capacitor)

IT Rayon, processes
 RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
 (polymer **gel electrolyte** secondary cell and elec. double-layer capacitor)

IT Alkali metal salts
 Carbonaceous materials (technological products)

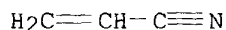
- Fluoropolymers, uses
- Oxides (inorganic), uses
- Phosphonium compounds
- Quaternary ammonium compounds, uses
- Sulfides, uses
- Transition metal salts
- RL: DEV (Device component use); USES (Uses)
(polymer **gel electrolyte** secondary cell and elec.
double-layer capacitor)
- IT Plastics, uses
- RL: TEM (Technical or engineered material use); USES (Uses)
(thermoplastics; polymer **gel electrolyte** secondary
cell and elec. double-layer capacitor)
- IT **Polyurethanes**, uses
- RL: DEV (Device component use); USES (Uses)
(unsatd.; polymer **gel electrolyte** secondary cell
and elec. double-layer capacitor)
- IT Lithium alloy, base
- RL: DEV (Device component use); USES (Uses)
(polymer **gel electrolyte** secondary cell and elec.
double-layer capacitor)
- IT 7440-44-0, Activated carbon, uses
- RL: DEV (Device component use); USES (Uses)
(activated; polymer **gel electrolyte** secondary cell
and elec. double-layer capacitor)
- IT **25014-41-9**, Polyacrylonitrile
- RL: CPS (Chemical process); PEP (Physical, engineering or chemical
process); PROC (Process)
(polymer **gel electrolyte** secondary cell and elec.
double-layer capacitor)
- IT 7439-93-2, Lithium, uses 21324-40-3, Lithium hexafluorophosphate
437552-20-0
- RL: DEV (Device component use); USES (Uses)
(polymer **gel electrolyte** secondary cell and elec.
double-layer capacitor)
- IT 9002-89-5DP, Polyvinyl alcohol, cyanoethylated 9002-89-5DP, Polyvinyl
alcohol, dihydroxypropylated **9004-64-2DP**, Hydroxypropyl
cellulose, cyanoethylated 25722-70-7DP, Polyglycidol, cyanoethylated
25722-70-7P, Polyglycidol **437552-21-1P 437552-22-2P**
437552-23-3P
- RL: DEV (Device component use); SPN (Synthetic preparation); PREP
(Preparation); USES (Uses)
(polymer **gel electrolyte** secondary cell and elec.
double-layer capacitor)
- IT 78-67-1, Azobisisobutyronitrile 26915-72-0, Methoxypolyethylene glycol
monomethacrylate
- RL: MOA (Modifier or additive use); USES (Uses)
(polymer **gel electrolyte** secondary cell and elec.
double-layer capacitor)
- IT **25766-14-7P**
- RL: SPN (Synthetic preparation); PREP (Preparation)
(polymer **gel electrolyte** secondary cell and elec.
double-layer capacitor)
- IT 123-25-1, Diethyl succinate **96344-18-2** 153550-33-5, Amberlite
IRC-76
- RL: TEM (Technical or engineered material use); USES (Uses)
(polymer **gel electrolyte** secondary cell and elec.
double-layer capacitor)
- IT **25014-41-9**, Polyacrylonitrile

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(polymer **gel electrolyte** secondary cell and elec. double-layer capacitor)

RN 25014-41-9 HCAPLUS
CN 2-Propenenitrile, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1
CMF C3 H3 N



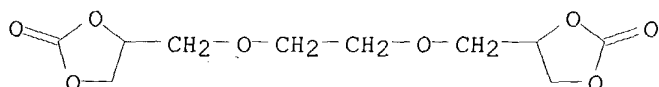
IT 437552-20-0

RL: DEV (Device component use); USES (Uses)
(polymer **gel electrolyte** secondary cell and elec. double-layer capacitor)

RN 437552-20-0 HCAPLUS
CN Carbonic acid, diethyl ester, polymer with 4,4'-[1,2-ethanediylbis(oxymethylene)]bis[1,3-dioxolan-2-one] and α -(2-methyl-1-oxo-2-propenyl)- ω -methoxypoly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

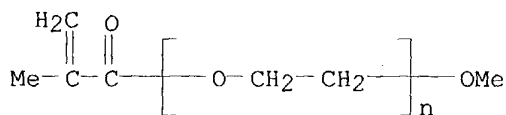
CM 1

CRN 116170-01-5
CMF C10 H14 O8



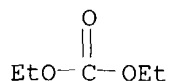
CM 2

CRN 26915-72-0
CMF (C2 H4 O)n C5 H8 O2
CCI PMS



CM 3

CRN 105-58-8
CMF C5 H10 O3



IT 9004-64-2DP, Hydroxypropyl cellulose, cyanoethylated
 437552-21-1P 437552-22-2P 437552-23-3P
 RL: DEV (Device component use); SPN (Synthetic preparation); PREP
 (Preparation); USES (Uses)
 (polymer gel electrolyte secondary cell and elec.
 double-layer capacitor)

RN 9004-64-2 HCAPLUS

CN Cellulose, 2-hydroxypropyl ether (9CI) (CA INDEX NAME)

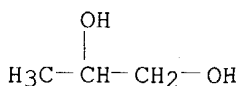
CM 1

CRN 9004-34-6
 CMF Unspecified
 CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 57-55-6
 CMF C3 H8 O2

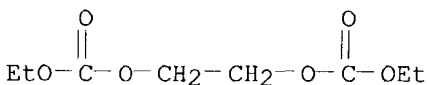


RN 437552-21-1 HCAPLUS

CN Carbonic acid, 1,2-ethanediyl diethyl ester, polymer with
 α -(2-methyl-1-oxo-2-propenyl)- ω -methoxypoly(oxy-1,2-
 ethanediyl) (9CI) (CA INDEX NAME)

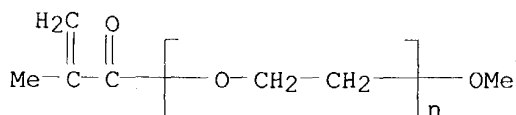
CM 1

CRN 35466-87-6
 CMF C8 H14 O6



CM 2

CRN 26915-72-0
 CMF (C2 H4 O)_n C5 H8 O2
 CCI PMS



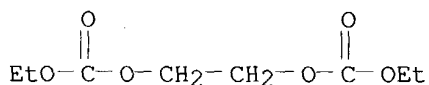
RN 437552-22-2 HCAPLUS

CN Carbonic acid, diethyl ester, polymer with 1,2-ethanediyl bis(ethyl carbonate), 1,1'-methylenebis[4-isocyanatobenzene], methyloxirane, α -(2-methyl-1-oxo-2-propenyl)- ω -methoxypoly(oxy-1,2-ethanediyl) and oxirane (9CI) (CA INDEX NAME)

CM 1

CRN 35466-87-6

CMF C8 H14 O6

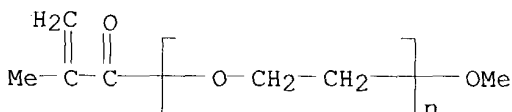


CM 2

CRN 26915-72-0

CMF (C2 H4 O)_n C5 H8 O2

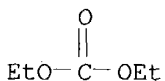
CCI PMS



CM 3

CRN 105-58-8

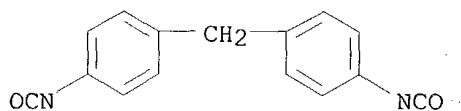
CMF C5 H10 O3



CM 4

CRN 101-68-8

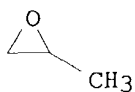
CMF C15 H10 N2 O2



CM 5

CRN 75-56-9

CMF C3 H6 O



CM 6

CRN 75-21-8

CMF C2 H4 O



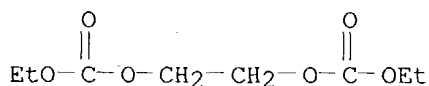
RN 437552-23-3 HCAPLUS

CN Cellulose, 2-cyanopropyl ether, polymer with 1,2-ethanediyl bis(ethyl carbonate) and α -(2-methyl-1-oxo-2-propenyl)- ω -methoxypoly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

CM 1

CRN 35466-87-6

CMF C8 H14 O6

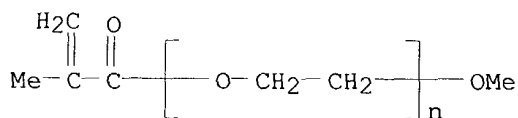


CM 2

CRN 26915-72-0

CMF (C2 H4 O)_n C5 H8 O2

CCI PMS



CM 3

CRN 60001-05-0

CMF C4 H7 N O . x Unspecified

CM 4

CRN 9004-34-6

CMF Unspecified

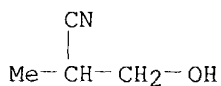
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 5

CRN 2567-01-3

CMF C4 H7 N O



IT 25766-14-7P

RL: SPN (Synthetic preparation); PREP (Preparation)
(polymer **gel electrolyte** secondary cell and elec.
double-layer capacitor)

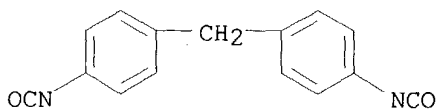
RN 25766-14-7 HCAPLUS

CN Oxirane, methyl-, polymer with 1,1'-methylenebis[4-isocyanatobenzene] and
oxirane (9CI) (CA INDEX NAME)

CM 1

CRN 101-68-8

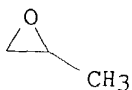
CMF C15 H10 N2 O2



CM 2

CRN 75-56-9

CMF C3 H6 O



CM 3

CRN 75-21-8

CMF C2 H4 O



IT 96344-18-2

RL: TEM (Technical or engineered material use); USES (Uses)
(polymer **gel electrolyte** secondary cell and elec.
double-layer capacitor)

RN 96344-18-2 HCAPLUS

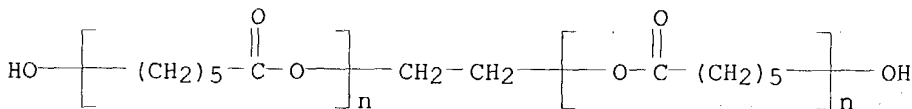
CN Poly[oxy(1-oxo-1,6-hexanediyl)], α, α' -1,2-
ethanediylbis[ω -hydroxy-, polymer with 1,1'-methylenebis[4-
isocyanatobenzene] (9CI) (CA INDEX NAME)

CM 1

CRN 59692-54-5

CMF (C6 H10 O2)_n (C6 H10 O2)_n C2 H6 O2

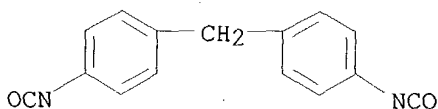
CCI PMS



CM 2

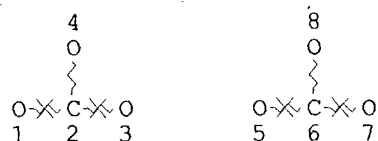
CRN 101-68-8

CMF C15 H10 N2 O2



=> D QUE L60

L2 17 SEA FILE=REGISTRY ABB=ON (25722-70-7/BI OR 9002-89-5/BI OR
123-25-1/BI OR 153550-33-5/BI OR 21324-40-3/BI OR 25014-41-9/BI
OR 25766-14-7/BI OR 26915-72-0/BI OR 437552-20-0/BI OR
437552-21-1/BI OR 437552-22-2/BI OR 437552-23-3/BI OR 7439-93-2
/BI OR 7440-44-0/BI OR 78-67-1/BI OR 9004-64-2/BI OR 96344-18-2
/BI)
L3 STR



*Structure
search*

NODE ATTRIBUTES:

NSPEC IS RC AT 1
NSPEC IS RC AT 2
NSPEC IS RC AT 3
NSPEC IS RC AT 5
NSPEC IS RC AT 6
NSPEC IS RC AT 7

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 8

STEREO ATTRIBUTES: NONE

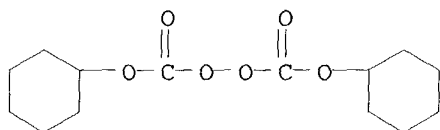
L5 14251 SEA FILE=REGISTRY SSS FUL L3
L6 66509 SEA FILE=REGISTRY ABB=ON PUR/PCT
L7 3 SEA FILE=REGISTRY ABB=ON L2 AND L6
L8 294092 SEA FILE=REGISTRY ABB=ON PACR/PCT
L9 5 SEA FILE=REGISTRY ABB=ON L8 AND L2
L10 12588 SEA FILE=REGISTRY ABB=ON L6 AND L8
L11 55 SEA FILE=REGISTRY ABB=ON L5 AND L6
L14 12510 SEA FILE=HCAPLUS ABB=ON L5
L16 8 SEA FILE=HCAPLUS ABB=ON L14 AND GEL(5A)ELECTROLYTE?
L17 5105 SEA FILE=HCAPLUS ABB=ON L10
L18 38 SEA FILE=HCAPLUS ABB=ON L14 AND L17
L19 1 SEA FILE=HCAPLUS ABB=ON L18 AND ELECTROLYTE?
L20 1 SEA FILE=HCAPLUS ABB=ON L18 AND BATTER?
L21 38449 SEA FILE=HCAPLUS ABB=ON L6
L22 177 SEA FILE=HCAPLUS ABB=ON L14 AND L21
L23 2 SEA FILE=HCAPLUS ABB=ON L22 AND (ELECTROLYTE? OR BATTER?)
L24 516 SEA FILE=HCAPLUS ABB=ON L14 AND (?URETHANE? OR ?ISOCYANT?)
L25 8 SEA FILE=HCAPLUS ABB=ON L24 AND (ELECTROLYTE? OR BATTER?)
L26 696 SEA FILE=HCAPLUS ABB=ON L14 AND (?URETHANE? OR ?ISOCYANAT?)
L27 13 SEA FILE=HCAPLUS ABB=ON L26 AND (ELECTROLYTE? OR BATTER?)
L28 29 SEA FILE=HCAPLUS ABB=ON L11
L29 1 SEA FILE=HCAPLUS ABB=ON L28 AND (ELECTROLYTE? OR BATTER?)
L30 1 SEA FILE=HCAPLUS ABB=ON L28 AND ELECTROCHEM?/SC,SX
L31 20 SEA FILE=HCAPLUS ABB=ON L16 OR L19 OR L20 OR L23 OR L25 OR
L27 OR L29 OR L30
L32 14753 SEA FILE=HCAPLUS ABB=ON L7 OR L9
L33 34 SEA FILE=HCAPLUS ABB=ON L14 AND L32
L34 3 SEA FILE=HCAPLUS ABB=ON L33 AND ELECTROCHEM?/SC,SX
L35 4 SEA FILE=HCAPLUS ABB=ON L33 AND (ELECTROLYTE? OR BATTER?)
L36 22 SEA FILE=HCAPLUS ABB=ON L31 OR L34 OR L35
L38 6627 SEA FILE=REGISTRY ABB=ON 9004-34-6/CRN
L39 1 SEA FILE=REGISTRY ABB=ON 9004-64-2
L40 19075 SEA FILE=REGISTRY ABB=ON 75-56-9/CRN
L42 23908 SEA FILE=REGISTRY ABB=ON 75-21-8/CRN
L43 17712 SEA FILE=REGISTRY ABB=ON 101-68-8/CRN
L44 14351 SEA FILE=REGISTRY ABB=ON L6 AND L43

L45 6399 SEA FILE=REGISTRY ABB=ON L6 AND (L38 OR L40 OR L42)
 L46 14112 SEA FILE=HCAPLUS ABB=ON L44
 L47 7675 SEA FILE=HCAPLUS ABB=ON L39
 L48 4596 SEA FILE=HCAPLUS ABB=ON L45
 L49 24 SEA FILE=HCAPLUS ABB=ON L14 AND L46
 L50 24 SEA FILE=HCAPLUS ABB=ON L14 AND (L47 OR L48)
 L51 47 SEA FILE=HCAPLUS ABB=ON L49 OR L50
 L52 2 SEA FILE=HCAPLUS ABB=ON L51 AND (ELECTROCHEM?/SC, SX OR
 ELECTROLYTE? OR BATTER?)
 L54 22 SEA FILE=HCAPLUS ABB=ON L36 OR L52
 L55 1 SEA FILE=REGISTRY ABB=ON 35466-87-6
 L56 4 SEA FILE=REGISTRY ABB=ON 35466-87-6/CRN
 L57 5 SEA FILE=REGISTRY ABB=ON L55 OR L56
 L58 18 SEA FILE=HCAPLUS ABB=ON L57
 L59 12 SEA FILE=HCAPLUS ABB=ON L58 AND (ELECTROCHEM?/SC, SX OR
 ELECTROLYTE? OR BATTER?)
 L60 21 SEA FILE=HCAPLUS ABB=ON L54 NOT L59

=> D L60 BIB ABS HITIND HITSTR 1-21

L60 ANSWER 1 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2004:279606 HCAPLUS
 DN 141:39217
 TI Long-life air working conducting semi-IPN/ionic liquid based actuator
 AU Vidal, Frederic; Plesse, Cedric; Teyssie, Dominique; Chevrot, Claude
 CS Laboratoire de Physico-Chimie des Polymeres et des Interfaces (LPPI),
 Universite de Cergy-Pontoise, Cergy-Pontoise, F-95031, Fr.
 SO Synthetic Metals (2004), 142(1-3), 287-291
 CODEN: SYMEDZ; ISSN: 0379-6779
 PB Elsevier Science B.V.
 DT Journal
 LA English
 AB Actuators based on semi-interpenetrating polymer network (sIPN) are
 synthesized from poly(3,4-ethylenedioxythiophene) and
 polybutadiene/poly(ethylene oxide) IPN. This material is similar to a
 layered actuator with the advantage that no adhesive interface is
 necessary. In the presence of actuator room temperature ionic liquid (RTIL) as
electrolyte, the actuator is be able to work in air over a period
 of one month.
 CC 37-6 (Plastics Manufacture and Processing)
 Section cross-reference(s): 76
 IT Actuators
 Ionic liquids
 (long-life air working conducting PEDOT-containing semi-interpenetrating
 polymethacrylate-**polyurethane** network/ionic liquid based
 actuator)
 IT Conducting polymers
 (polythiophenes; long-life air working conducting PEDOT-containing
 semi-interpenetrating polymethacrylate-**polyurethane**
 network/ionic liquid based actuator)
 IT Interpenetrating polymer networks
 (semi-interpenetrating; long-life air working conducting PEDOT-containing
 semi-interpenetrating polymethacrylate-**polyurethane**
 network/ionic liquid based actuator)
 IT 7705-08-0, Ferric chloride, reactions
 RL: RGT (Reagent); RACT (Reactant or reagent)
 (in ethylenedioxythiophene polymerization; long-life air working conducting
 PEDOT-containing semi-interpenetrating polymethacrylate-

- IT **polyurethane** network/ionic liquid based actuator)
 174899-82-2, 1-Ethyl-3-methylimidazolium bis(trifluoromethylsulfonyl)imide
 RL: MOA (Modifier or additive use); USES (Uses)
 (long-life air working conducting PEDOT-containing semi-interpenetrating
 polymethacrylate-**polyurethane** network/ionic liquid based
 actuator)
- IT 9003-17-2D, Polybutadiene, hydroxy-terminated, polymers with Desmodur N
 3300 104559-01-5D, Desmodur N 3300, polymers with hydroxy-terminated
 polybutadiene 108927-94-2 126213-51-2, Poly(3,4-
 ethylenedioxythiophene)
 RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)
 (long-life air working conducting PEDOT-containing semi-interpenetrating
 polymethacrylate-**polyurethane** network/ionic liquid based
 actuator)
- IT **1561-49-5**, Dicyclohexyl peroxydicarbonate
 RL: CAT (Catalyst use); USES (Uses)
 (methacrylate polymerization catalyst; long-life air working conducting
 PEDOT-containing semi-interpenetrating polymethacrylate-
polyurethane network/ionic liquid based actuator)
- IT 77-58-7, Dibutyltin dilaurate
 RL: CAT (Catalyst use); USES (Uses)
 (**urethane** bond formation catalysts; long-life air working
 conducting PEDOT-containing semi-interpenetrating polymethacrylate-
polyurethane network/ionic liquid based actuator)
- IT **1561-49-5**, Dicyclohexyl peroxydicarbonate
 RL: CAT (Catalyst use); USES (Uses)
 (methacrylate polymerization catalyst; long-life air working conducting
 PEDOT-containing semi-interpenetrating polymethacrylate-
polyurethane network/ionic liquid based actuator)
- RN 1561-49-5 HCAPLUS
 CN Peroxydicarbonic acid, dicyclohexyl ester (6CI, 8CI, 9CI) (CA INDEX NAME)



RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

- L60 ANSWER 2 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2003:970422 HCAPLUS
 DN 140:146916
 TI Polymer **gel electrolytes** prepared from P(EG-co-PG) and
 their nanocomposites using organically modified montmorillonite
 AU Jung, H. R.; Cho, M. S.; Ahn, J. H.; Nam, J. D.; Lee, Y.
 CS School of Applied Chemistry and Chemical Engineering, & Polymer Technology
 Institute, Sungkyunkwan University, Suwon, 440-746, S. Korea
 SO Journal of Applied Polymer Science (2004), 91(2), 894-899
 CODEN: JAPNAB; ISSN: 0021-8995
 PB John Wiley & Sons, Inc.
 DT Journal
 LA English
 AB Polymer **gel electrolytes** were prepared by thermal
 crosslinking reaction of a series of acrylic endcapped poly(ethylene
 glycol) and poly(propylene glycol) [P(EG-co-PG)] having various geometries

and mol. wts. Acrylic end-capped prepolymers were prepared by the esterification of low mol. weight (Mn: 1900-5000) P(EG-co-PG) with acrylic acid. The linear increase in the ionic conductivity of polymer **gel electrolyte** films was observed with increasing temperature. The increase in the conductivity was also monitored by increasing the mol. weight of precursor polymer. Nanocomposite electrolytes were prepared by the addition of 5 wt % of organically modified layered silicate (montmorillonite) into the **gel polymer electrolytes**. The enhancement of the ionic conductivity as well as mech. properties was observed in the nanocomposite systems.

CC 37-5 (Plastics Manufacture and Processing)

Section cross-reference(s): 72

IT Quaternary ammonium compounds, uses

RL: MOA (Modifier or additive use); USES (Uses)

(bis(hydroxyethyl)methyltallow alkyl, chlorides, montmorillonite modifying agents; **gel electrolytes** prepared from ethylene oxide-propylene oxide copolymer acrylate polymers and their nanocomposites with organically modified montmorillonite)

IT Ionic conductivity

Polymer **electrolytes**

Polymer morphology

(**gel electrolytes** prepared from ethylene oxide-propylene oxide copolymer acrylate polymers and their nanocomposites with organically modified montmorillonite)

IT Intercalation compounds

RL: PRP (Properties)

(**gel electrolytes** prepared from ethylene oxide-propylene oxide copolymer acrylate polymers and their nanocomposites with organically modified montmorillonite)

IT 15520-11-3

RL: CAT (Catalyst use); USES (Uses)

(Percadox 16, in polyoxyalkylene acrylate polymerization; **gel electrolytes** prepared from ethylene oxide-propylene oxide copolymer acrylate polymers and their nanocomposites with organically modified montmorillonite)

IT 33454-82-9, Lithium triflate

RL: NUU (Other use, unclassified); USES (Uses)

(**gel electrolytes** prepared from ethylene oxide-propylene oxide copolymer acrylate polymers and their nanocomposites with organically modified montmorillonite)

IT 7439-93-2D, Lithium, complexes with ethylene oxide-propylene oxide copolymer polyacrylates 85887-85-0D, lithium complexes 111459-11-1D, Ethylene oxide-propylene oxide copolymer, diacrylate, homopolymer, lithium complexes 652968-54-2D, Ethylene oxide-propylene oxide block copolymer, diacrylate, homopolymer, lithium complexes

RL: POF (Polymer in formulation); PRP (Properties); USES (Uses)

(**gel electrolytes** prepared from ethylene oxide-propylene oxide copolymer acrylate polymers and their nanocomposites with organically modified montmorillonite)

IT 1318-93-0, Montmorillonite, properties

RL: PRP (Properties)

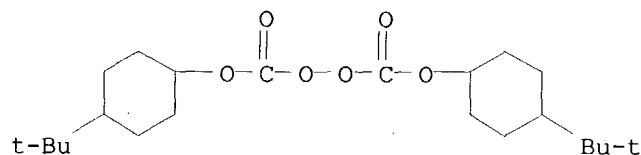
(**gel electrolytes** prepared from ethylene oxide-propylene oxide copolymer acrylate polymers and their nanocomposites with organically modified montmorillonite)

IT 15520-11-3

RL: CAT (Catalyst use); USES (Uses)

(Percadox 16, in polyoxyalkylene acrylate polymerization; **gel electrolytes** prepared from ethylene oxide-propylene oxide copolymer acrylate polymers and their nanocomposites with organically

modified montmorillonite)
 RN 15520-11-3 HCAPLUS
 CN Peroxydicarbonic acid, bis[4-(1,1-dimethylethyl)cyclohexyl] ester (9CI)
 (CA INDEX NAME)



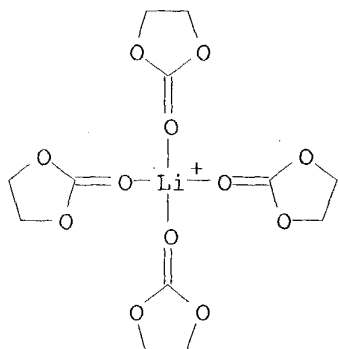
RE.CNT 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

- L60 ANSWER 3 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2003:844823 HCAPLUS
 DN 140:44654
 TI Mixed Solvent and Polymer Coordination in PAN and PMMA **Gel**
 Polymer **Electrolytes** Studied by Ab Initio Calculations and Raman
 Spectroscopy
 AU Johansson, Patrik; Edvardsson, Magnus; Adebahr, Josefina; Jacobsson, Per
 CS Department of Applied Physics, Chalmers University of Technology,
 Goeteborg, SE-412 96, Swed.
 SO Journal of Physical Chemistry B (2003), 107(46), 12622-12627
 CODEN: JPCBFK; ISSN: 1520-6106
 PB American Chemical Society
 DT Journal
 LA English
 AB The local and mixed solvent and polymer coordination in polyacrylonitrile
 (PAN) and poly(Me methacrylate) (PMMA)/carbonate-based
 lithium-ion-conducting **gel polymer electrolytes** was
 studied by using ab initio (Hartree-Fock) calcns. and Raman spectroscopy.
 The presence of PAN and PMMA (polymers) were approximated by the
 corresponding saturated monomers (e.g., cyanoethane and Me isobutyrate,
 resp.). The energies of the coordination complexes were evaluated by d.
 functional theory with a hybrid functional and by performing simple
 thermodyn. calcns. Observed frequency shifts for ethylene carbonate (EC) and
 PAN due to lithium ion coordination were confirmed by computing the
 Hessian matrixes for pure and mixed complexes. The lithium ion has a
 preference to coordinate to EC solvent mols. In the PAN-based gels, there
 was only a slight preference, whereas for PMMA gels the preference is much
 larger. The temperature-dependent coordination was directly related to the
 differences in lithium ion complexation energies in the mixed solvent and
 polymer ligand complexes. The implications for the formation and
 stability of gels and for the lithium ion transport in different gel
 systems are discussed.
 CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy
 Technology)
 Section cross-reference(s): 65
 ST solvent polymer **electrolyte** coordination HF MO; lithium ethylene
 carbonate coordination enthalpy **battery electrolyte**;
 density functional theory solvent polymer **electrolyte**
 coordination
 IT Complexation
 Density functional theory
 Hartree-Fock method

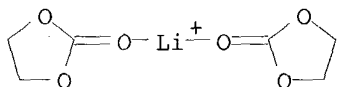
- (ab initio HF MO and d. functional theory calcns. of mixed solvent and polymer coordination in **gel polymer-type battery electrolytes**)
- IT **Battery electrolytes**
(gelled; ab initio HF MO and d. functional theory calcns. of mixed solvent and polymer coordination in **gel polymer-type battery electrolytes**)
- IT Coordination compounds
RL: PRP (Properties)
(lithium-ethylene carbonate complexes; ab initio HF MO and d. functional theory calcns. of mixed solvent and polymer coordination in **gel polymer-type battery electrolytes**)
- IT Complexation enthalpy
Formation enthalpy
Raman spectra
Vibrational energy
(of lithium-ethylene carbonate complexes; ab initio HF MO and d. functional theory calcns. of mixed solvent and polymer coordination in **gel polymer-type battery electrolytes**)
- IT 96-49-1, Ethylene carbonate
RL: RCT (Reactant); RACT (Reactant or reagent)
(complexation of, with lithium ion; ab initio HF MO and d. functional theory calcns. of mixed solvent and polymer coordination in **gel polymer-type battery electrolytes**)
- IT 17341-24-1, Lithium(1+), reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(complexation of, with polymer **electrolytes**; ab initio HF MO and d. functional theory calcns. of mixed solvent and polymer coordination in **gel polymer-type battery electrolytes**)
- IT 214269-25-7 637024-28-3 637024-29-4
637024-30-7
RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); FORM (Formation, nonpreparative); PROC (Process)
(formation and ethylene carbonate complexation with; ab initio HF MO and d. functional theory calcns. of mixed solvent and polymer coordination in **gel polymer-type battery electrolytes**)
- IT 9011-14-7D, Poly(methyl methacrylate), complexes with lithium(1+) and ethylene carbonate 25014-41-9D, Polyacrylonitrile, complexes with lithium(1+) and ethylene carbonate
RL: PRP (Properties)
(model polymer **gel-type battery electrolyte** ; ab initio HF MO and d. functional theory calcns. of mixed solvent and polymer coordination in **gel polymer-type battery electrolytes**)
- IT 637024-31-8
RL: PRP (Properties)
(structure of, as analog of lithium-PAN complexes; ab initio HF MO and d. functional theory calcns. of mixed solvent and polymer coordination in **gel polymer-type battery electrolytes**)
- IT 637024-32-9
RL: PRP (Properties)
(structure of, as analog of lithium-PMMA complexes; ab initio HF MO and d. functional theory calcns. of mixed solvent and polymer coordination in **gel polymer-type battery electrolytes**)
- IT 214269-25-7 637024-29-4 637024-30-7
RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical

process); PRP (Properties); PYP (Physical process); FORM (Formation, nonpreparative); PROC (Process)
(formation and ethylene carbonate complexation with; ab initio HF MO and d. functional theory calcns. of mixed solvent and polymer coordination in **gel polymer-type battery electrolytes**)

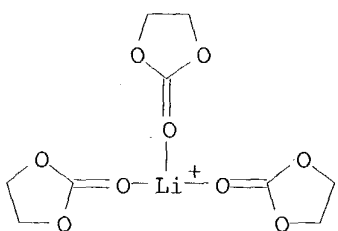
RN 214269-25-7 HCAPLUS
CN Lithium(1+), tetrakis(1,3-dioxolan-2-one-κO2)-, (T-4)- (9CI) (CA INDEX NAME)



RN 637024-29-4 HCAPLUS
CN Lithium(1+), bis(1,3-dioxolan-2-one-κO2)- (9CI) (CA INDEX NAME)



RN 637024-30-7 HCAPLUS
CN Lithium(1+), tris(1,3-dioxolan-2-one-κO2)- (9CI) (CA INDEX NAME)



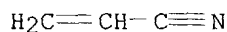
IT 25014-41-9D, Polyacrylonitrile, complexes with lithium(1+) and ethylene carbonate
RL: PRP (Properties)
(model polymer **gel-type battery electrolyte**
; ab initio HF MO and d. functional theory calcns. of mixed solvent and polymer coordination in **gel polymer-type battery electrolytes**)

RN 25014-41-9 HCAPLUS
CN 2-Propenenitrile, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1

CMF C3 H3 N



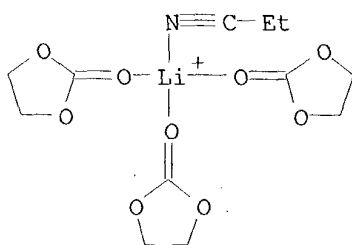
IT 637024-31-8

RL: PRP (Properties)

(structure of, as analog of lithium-PAN complexes; ab initio HF MO and d. functional theory calcns. of mixed solvent and polymer coordination in **gel polymer-type battery electrolytes**)

RN 637024-31-8 HCAPLUS

CN Lithium(1+), tris(1,3-dioxolan-2-one- κ O2)(propanenitrile)-, (T-4)- (9CI) (CA INDEX NAME)



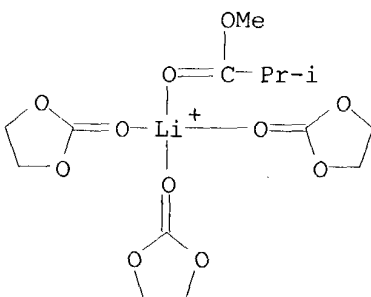
IT 637024-32-9

RL: PRP (Properties)

(structure of, as analog of lithium-PMMA complexes; ab initio HF MO and d. functional theory calcns. of mixed solvent and polymer coordination in **gel polymer-type battery electrolytes**)

RN 637024-32-9 HCAPLUS

CN Lithium(1+), tris(1,3-dioxolan-2-one- κ O2)(methyl 2-methylpropanoate- κ O')-, (T-4)- (9CI) (CA INDEX NAME)



RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L60 ANSWER 4 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:794160 HCAPLUS
DN 139:310005

KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505

TI **Electrolyte** composition and electrochemical **battery**

IN Yasuda, Takayasu; Wariishi, Koji

PA Fuji Photo Film Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 28 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2003288954	A2	20031010	JP 2002-88588	20020327
PRAI	JP 2002-88588		20020327		

AB New liquid crystal **electrolyte** is reported which can be used for production of electrochem. cell, nonaq. secondary cell, or optical-electrochem. cell. The ionic liquid crystal compound used as the **electrolyte** has the following general formula:
 $[(A-L1)_{m1}-X-(-L2-R0)_{n1}]Y$, where A is mesogen group, L1 and L2 are double bonded or single bonded, R0 is a substitution group, m1 is 1 or 2, n1 is 0 or 1, X is an ionic group, and Y is a counter ion. The **electrolyte** has good elec. charge conductivity, good optical-elec. conversion rate, good durability, and good cycling property.

IC ICM H01M014-00

ICS H01B001-06; H01L031-04; H01M010-40

CC 52-1 (**Electrochemical**, Radiational, and Thermal Energy Technology)

Section cross-reference(s): 73, 75, 76

ST **electrolyte** compn electrochem **battery** liq crystal

IT Secondary **batteries**

(lithium, nonaq.; synthesis of ionic liquid crystal as **electrolyte** for electrochem. **battery**)

IT Electrochemical cells

Electrodes

Electrooptical materials

Liquid crystals

Semiconductor materials

(synthesis of ionic liquid crystal as **electrolyte** for electrochem. **battery**)

IT Carbon black, uses

Glass, uses

RL: DEV (Device component use); USES (Uses)

(synthesis of ionic liquid crystal as **electrolyte** for electrochem. **battery**)

IT 1314-23-4, Zirconia, uses 7429-90-5, Aluminum, uses 7439-92-1, Lead, uses 7439-93-2, Lithium, uses 7440-06-4, Platinum, uses 7440-44-0, Carbon, uses 7782-42-5, Graphite, uses 12190-79-3, Lithium cobalt oxide LiCoO2 13463-67-7, Titania, uses **25014-41-9**, Polyacrylonitrile 612542-19-5 612542-20-8 612542-22-0 612542-23-1 612542-24-2 612542-26-4 612542-28-6 612542-29-7 **612542-31-1** 612542-33-3 612543-07-4 612543-08-5 612543-09-6

RL: DEV (Device component use); USES (Uses)

(synthesis of ionic liquid crystal as **electrolyte** for electrochem. **battery**)

IT 612542-16-2P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(synthesis of ionic liquid crystal as **electrolyte** for electrochem. **battery**)

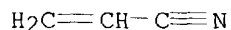
IT 421-85-2 5197-62-6 7144-08-3

RL: RCT (Reactant); RACT (Reactant or reagent)

(synthesis of ionic liquid crystal as **electrolyte** for
electrochem. **battery**)
IT 473436-34-9P 612542-17-3P 612542-18-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT
(Reactant or reagent)
(synthesis of ionic liquid crystal as **electrolyte** for
electrochem. **battery**)
IT 25014-41-9, Polyacrylonitrile 612542-31-1
RL: DEV (Device component use); USES (Uses)
(synthesis of ionic liquid crystal as **electrolyte** for
electrochem. **battery**)
RN 25014-41-9 HCAPLUS
CN 2-Propenenitrile, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1
CMF C3 H3 N



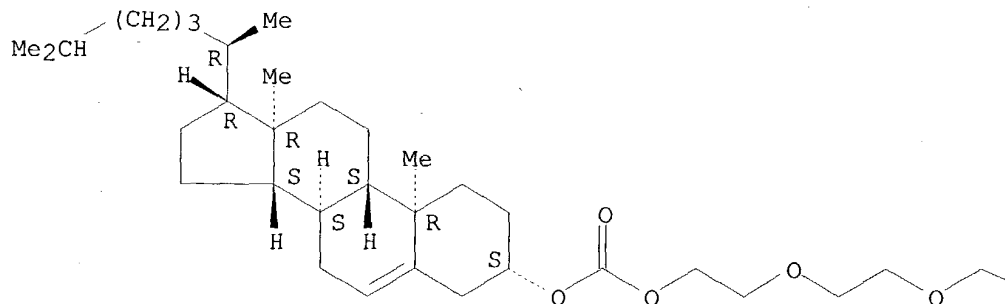
RN 612542-31-1 HCAPLUS
CN Cholest-5-en-3-ol (3 β)-, 2,5,8,16,19,22-hexaoxa-11,13-dithia-12-
azatricosanedioate (2:1), ion(1-), 1-ethyl-3-methyl-1H-imidazolium (9CI)
(CA INDEX NAME)

CM 1

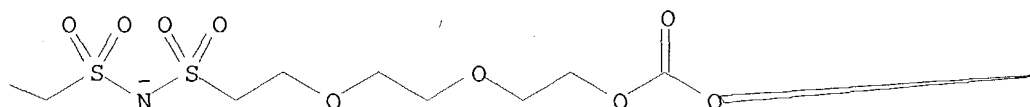
CRN 612542-30-0
CMF C68 H114 N O14 S2

Absolute stereochemistry.

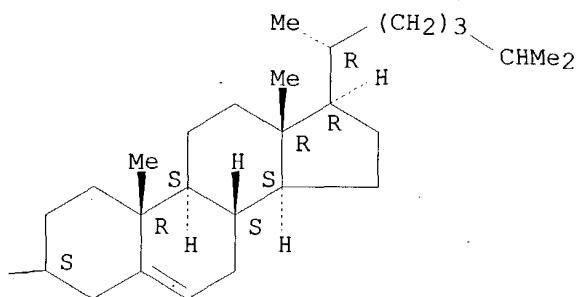
PAGE 1-A



PAGE 1-B



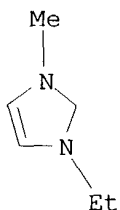
PAGE 1-C



CM 2

CRN 65039-03-4

CMF C6 H11 N2



*** FRAGMENT DIAGRAM IS INCOMPLETE ***

L60 ANSWER 5 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2003:696793 HCAPLUS

DN 139:232439

TI Ceramic membrane based on a substrate containing polymeric or natural fibers and its manufacture and use as a separation membrane

IN Hennige, Volker; Hying, Christian; Hoerpel, Gerhard

PA Creavis Gesellschaft fuer Technologie und Innovation m.b.H., Germany

KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505

SO PCT Int. Appl., 27 pp.

CODEN: PIXXD2

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003072231	A2	20030904	WO 2003-EP257	20030114
	WO 2003072231	A3	20040311		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

DE 10208280 A1 20030904 DE 2002-10208280 20020226

PRAI DE 2002-10208280 A 20020226

AB The membranes comprise a flat flexible substrate provided with a plurality of openings and a coating arranged on the inside and outside of said substrate. The material of the substrate is selected from non-woven fleeces of polymer fibers having a porosity of >50 %; the coating is a porous, ceramic coating. Preferably, the substrate has a thickness of between 10-200 μ m. Said membranes have a visibly higher flow than traditional membranes. The membranes can be used as separators for **batteries** or as microfiltration membranes.

IC ICM B01D069-10

ICS B01D071-02

CC 48-1 (Unit Operations and Processes)

IT Ceramic membranes

Fuel cell separators

Pervaporation

Primary **battery** separators

Secondary **battery** separators

Ultrafilters

(composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse osmosis, in gas sepns. and as **battery** separators)

IT Acrylic fibers, reactions

Polyamide fibers, reactions

Polyester fibers, reactions

Polyimide fibers

Silanes

RL: RCT (Reactant); RACT (Reactant or reagent)

(composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse osmosis, in gas sepns. and as **battery** separators)

IT Membranes, nonbiological

(composite; composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse osmosis, in gas sepns. and as **battery** separators)

IT Fluoropolymers, reactions

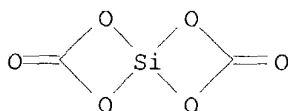
Polyesters, reactions

RL: RCT (Reactant); RACT (Reactant or reagent)

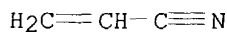
(fibers; composite membrane, method for the production thereof and the use

- of the membrane in nano- and ultrafiltration, in reverse osmosis, in gas sepns. and as **battery** separators)
- IT Polyolefins
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (fleece; composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse osmosis, in gas sepns. and as **battery** separators)
- IT Synthetic polymeric fibers, uses
 RL: DEV (Device component use); USES (Uses)
 (membrane support; composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse osmosis, in gas sepns. and as **battery** separators)
- IT Reactors
 (membrane; composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse osmosis, in gas sepns. and as **battery** separators)
- IT Filters
 (microfilters, membranes; composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse osmosis, in gas sepns. and as **battery** separators)
- IT Membrane filters
 (nanofiltration; composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse osmosis, in gas sepns. and as **battery** separators)
- IT Membranes, nonbiological
 (reverse-osmosis; composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse osmosis, in gas sepns. and as **battery** separators)
- IT 593248-14-7P, S 450PET 593248-30-7P, S 240PAN 593248-34-1P, S 450PO
 593249-11-7P, S 100PET 593249-13-9P, S 100PAN 593249-14-0P, S 450PAN
 593249-16-2P, Z 450PAN
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse osmosis, in gas sepns. and as **battery** separators)
- IT 64-17-5, Ethanol, reactions 78-08-0, Vinyltriethoxysilane 78-10-4, Tetraethoxysilane 556-28-5, Yttrium carbonate 919-30-2, 3-Aminopropyltriethoxysilane 1067-53-4, Vinyltris(2-methoxyethoxy)silane 1314-23-4, Zirconium oxide, reactions 1314-36-9, Yttrium oxide, reactions 1344-28-1, Aluminumoxide, reactions 2031-67-6, Methyltriethoxysilane 2530-83-8, Dynasylan GLYMO 2530-85-0, Dynasylan MEMO 2768-02-7, Vinyltrimethoxysilane 7429-90-5D, Aluminum, alcoholates or halides 7440-21-3D, Silicon, alcoholates or halides 7440-32-6D, Titanium, alcoholates or halides 7440-65-5D, Yttrium, alcoholates or halides 7440-67-7D, Zirconium, alcoholates or halides 7631-86-9, Silicon oxide, reactions 7647-01-0, Hydrochloric acid, reactions 10361-93-0, Yttrium nitrate 13463-67-7, Titanium oxide, reactions 13473-90-0, Aluminum nitrate 13746-89-9, Zirconium nitrate 13860-02-1, Titanium nitrate 14455-29-9, Aluminum carbonate 17501-44-9, Zirconium acetylacetonate 23519-77-9 36577-48-7, Zirconium carbonate 45189-55-7 76214-28-3, Titanium carbonate
210893-37-1
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse osmosis, in gas sepns. and as **battery** separators)
- IT 9002-84-0, Polytetrafluoroethylene 25038-59-9, PET (polyester), reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)

- (fibers; composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse osmosis, in gas sepns. and as **battery** separators)
- IT 9002-88-4P, Polyethylene 9003-07-0P, Polypropylene
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (fleece; composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse osmosis, in gas sepns. and as **battery** separators)
- IT 25014-41-9, PAN
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (fleece; composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse osmosis, in gas sepns. and as **battery** separators)
- IT 210893-37-1
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse osmosis, in gas sepns. and as **battery** separators)
- RN 210893-37-1 HCAPLUS
 CN 1,3,5,7-Tetraoxa-4-silaspiro[3.3]heptane-2,6-dione (9CI) (CA INDEX NAME)



- IT 25014-41-9, PAN
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (fleece; composite membrane, method for the production thereof and the use of the membrane in nano- and ultrafiltration, in reverse osmosis, in gas sepns. and as **battery** separators)
- RN 25014-41-9 HCAPLUS
 CN 2-Propenenitrile, homopolymer (9CI) (CA INDEX NAME)
- CM 1
- CRN 107-13-1
 CMF C3 H3 N



- L60 ANSWER 6 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2003:461539 HCAPLUS
 DN 139:338201
 TI Cyclic carbonate functional polymers and their applications
 AU Webster, Dean C.
 CS Department of Polymers and Coatings, North Dakota State University, Fargo, ND, 58105, USA
 SO Progress in Organic Coatings (2003), 47(1), 77-86
 CODEN: POGCAT; ISSN: 0300-9440
 PB Elsevier Science B.V.
 DT Journal; General Review
 LA English
 AB A review describes monomers of five-membered cyclic carbonate and polymers

containing five-membered cyclic carbonate groups. Polymers containing cyclic carbonate groups can be synthesized by the free radical copolymn. of a cyclic carbonate containing unsatd. monomer. A number of cyclic carbonate containing

monomers have been explored including propylene carbonate methacrylate and acrylate, vinylene carbonate, glycerin carbonate vinyl ether, and vinyl ethylene carbonate. Another synthesis route involves the conversion of oxirane groups on epoxy resins to cyclic carbonate groups by reaction with CO₂. Research has focused on the reaction of the cyclic carbonate group with amines to form **hydroxyurethanes**. Difunctional cyclic carbonates reacted with diamines result in linear thermoplastic **polyurethanes**, while multifunctional cyclic carbonates reacted with multifunctional amines result in cross-linked **polyurethanes**. Other uses of cyclic carbonate functional polymers include the immobilization of enzymes and the coordination of lithium ions in solid polymer **batteries**.

CC 35-0 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 24, 28

IT 872-36-6, Vinylene carbonate 4427-96-7, Vinyl ethylene carbonate
7528-90-7 13818-44-5 85023-51-4 115089-62-8
127193-55-9 147876-32-2 147876-34-4

RL: MSC (Miscellaneous)

(monomers and polymers containing cyclic carbonate functional groups)

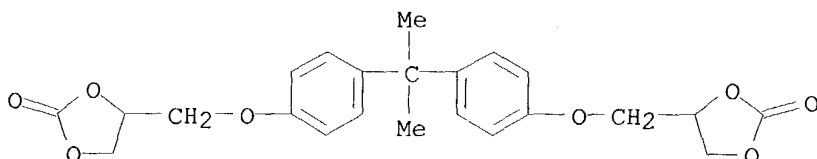
IT 85023-51-4 127193-55-9 147876-32-2
147876-34-4

RL: MSC (Miscellaneous)

(monomers and polymers containing cyclic carbonate functional groups)

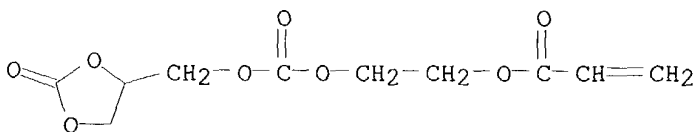
RN 85023-51-4 HCAPLUS

CN 1,3-Dioxolan-2-one, 4,4'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis- (9CI) (CA INDEX NAME)



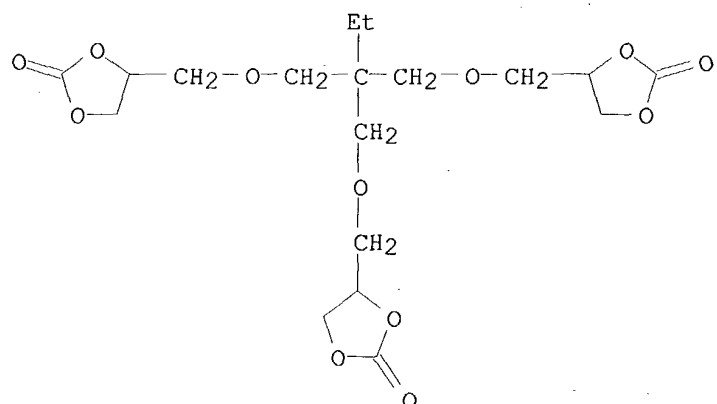
RN 127193-55-9 HCAPLUS

CN 2-Propenoic acid, 2-[[[(2-oxo-1,3-dioxolan-4-yl)methoxy]carbonyl]oxy]ethyl ester (9CI) (CA INDEX NAME)

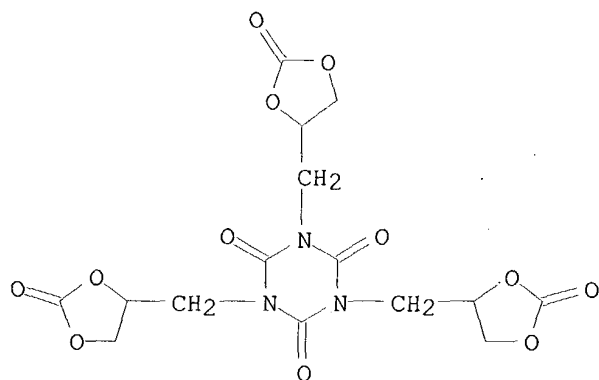


RN 147876-32-2 HCAPLUS

CN 1,3-Dioxolan-2-one, 4,4'-[[2-ethyl-2-[[[(2-oxo-1,3-dioxolan-4-yl)methoxy]methyl]-1,3-propanediyl]bis(oxymethylene)]bis- (9CI) (CA INDEX NAME)



RN 147876-34-4 HCAPLUS
 CN 1,3,5-Triazine-2,4,6(1H,3H,5H)-trione, 1,3,5-tris[(2-oxo-1,3-dioxolan-4-yl)methyl]- (9CI) (CA INDEX NAME)



RE.CNT 96 THERE ARE 96 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L60 ANSWER 7 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2003:437466 HCAPLUS
 DN 139:263175
 TI Characteristics of **gel** alkylene oxide polymer **electrolytes** containing γ -butyrolactone
 AU Matsuda, Yoshiharu; Fukushima, Tsuyoshi; Katoh, Yuichi; Ishiko, Eriko; Nishiura, Masahito; Kikuta, Manabu; Kono, Michiyuki
 CS Faculty of Engineering, Department of Applied Chemistry, Kansai University, Suita, Osaka, 564-8680, Japan
 SO Journal of Power Sources (2003), 119-121, 473-477
 CODEN: JPSODZ; ISSN: 0378-7753
 PB Elsevier Science B.V.
 DT Journal
 LA English
 AB **Gel** polymer **electrolytes** consisted of poly(alkylene oxide) (PAO), LiBF₄ or LiClO₄, and aprotic solvents (γ -butyrolactone (GBL) and/or ethylene carbonate (EC)) were prepared and the conductivity was

measured. The conductivity was very high and similar to that of the organic liquid electrolytes. The performance of Li | **gel** polymer electrolyte | LiCoO₂ cell was measured and compared to that of the cell with the liquid electrolyte corresponded. The cell with the **gel electrolyte** showed a decrease of capacity at high-rate discharge and low temperature owing to concentration polarization.

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38, 76

ST alkylene oxide polymer electrolyte gamma butyrolactone lithium salt battery; discharge capacity performance **gel electrolyte** lithium concn carbonate

IT Solvents
(aprotic; characteristics of **gel** alkylene oxide polymer electrolytes containing γ -butyrolactone)

IT Battery electrolytes
Crosslinking
Gels
Ionic conductivity
Polymer electrolytes
(characteristics of **gel** alkylene oxide polymer electrolytes containing γ -butyrolactone)

IT Polyoxyalkylenes, uses
RL: DEV (Device component use); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(characteristics of **gel** alkylene oxide polymer electrolytes containing γ -butyrolactone)

IT Binders
(composite electrode with C and CoLiO₂; characteristics of **gel** alkylene oxide polymer electrolytes containing γ -butyrolactone)

IT Electrolytic polarization
(concentration, change with cycling; characteristics of **gel** alkylene oxide polymer electrolytes containing γ -butyrolactone)

IT Secondary batteries
(lithium; characteristics of **gel** alkylene oxide polymer electrolytes containing γ -butyrolactone)

IT 15520-11-3, Bis(4-tert-butylcyclohexyl) peroxydicarbonate
RL: CAT (Catalyst use); USES (Uses)
(characteristics of **gel** alkylene oxide polymer electrolytes containing γ -butyrolactone)

IT 7429-90-5, Aluminum, uses
RL: DEV (Device component use); USES (Uses)
(characteristics of **gel** alkylene oxide polymer electrolytes containing γ -butyrolactone)

IT 9003-11-6P, Ethylene oxide-propylene oxide copolymer
RL: DEV (Device component use); PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(characteristics of **gel** alkylene oxide polymer electrolytes containing γ -butyrolactone)

IT 12190-79-3, Cobalt lithium oxide (CoLiO₂)
RL: DEV (Device component use); USES (Uses)
(composite electrode with C and binder; characteristics of **gel** alkylene oxide polymer electrolytes containing γ -butyrolactone)

IT 7440-44-0, Carbon, uses
RL: DEV (Device component use); USES (Uses)

(composite electrode with binder and CoLiO₂; characteristics of **gel** alkylene oxide polymer **electrolytes** containing γ -butyrolactone)

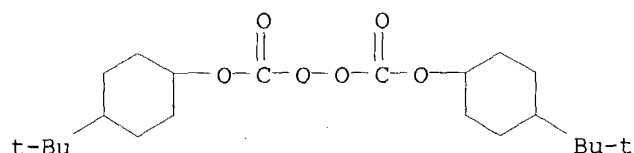
IT 7439-93-2, Lithium, uses
 RL: DEV (Device component use); USES (Uses)
 (electrode; characteristics of **gel** alkylene oxide polymer **electrolytes** containing γ -butyrolactone)

IT 7791-03-9 14283-07-9
 RL: DEV (Device component use); PRP (Properties); USES (Uses)
 (gels with aprotic solvent and PEO-PPO; characteristics of **gel** alkylene oxide polymer **electrolytes** containing γ -butyrolactone)

IT 96-48-0, γ -Butyrolactone 96-49-1, Ethylene carbonate
 RL: DEV (Device component use); PRP (Properties); USES (Uses)
 (gels with lithium salt and PEO-PPO; characteristics of **gel** alkylene oxide polymer **electrolytes** containing γ -butyrolactone)

IT 15520-11-3, Bis(4-tert-butylcyclohexyl) peroxydicarbonate
 RL: CAT (Catalyst use); USES (Uses)
 (characteristics of **gel** alkylene oxide polymer **electrolytes** containing γ -butyrolactone)

RN 15520-11-3 HCAPLUS
 CN Peroxydicarbonic acid, bis[4-(1,1-dimethylethyl)cyclohexyl] ester (9CI)
 (CA INDEX NAME)



RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

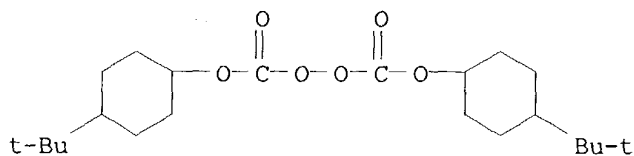
L60 ANSWER 8 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2002:553511 HCAPLUS
 DN 137:133370
 TI Composition containing vinyl monomer for forming gelled **electrolyte** and manufacture of gelled **electrolyte**
 IN Fukuda, Takeshi; Yamashita, Atsushi; Watanabe, Kimihiro
 PA Toyo Rubber Industry Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 6 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002208436	A2	20020726	JP 2001-345	20010105
PRAI	JP 2001-345		20010105		

AB The title composition contains ≥ 1 of monovinyl monomer selected from alkyl (meth)acrylate and alkoxy polyethylene glycol (meth)acrylate and a polyvinyl monomer containing **urethane** group-containing di(meth)acrylate. The composition may contain an **electrolyte** dissolved in an organic solvent. The gelled **electrolyte** is manufactured by adding a radical polymerization initiator in the composition and then heating for gelation.

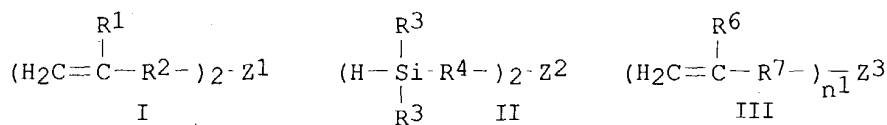
The gelled

- electrolyte**, especially suitable for double-layer capacitors, has high **electrolyte**-retaining property and ion conductivity
- IC ICM H01M010-40
ICS C08F290-00; C08F299-00; H01B001-06; H01B001-12; H01G009-038; H01G009-035; H01G009-00
- CC 76-10 (Electric Phenomena)
Section cross-reference(s): 38
- ST **urethane** vinyl polymer gelled **electrolyte** compn;
double layer capacitor gelled polymer **electrolyte**
- IT Gelation
Polymer **electrolytes**
(composition containing monovinyl monomer and **urethane** group-containing dimethacrylate for manufacture of gelled **electrolyte**)
- IT Capacitors
(double layer; composition containing monovinyl monomer and **urethane** group-containing dimethacrylate for manufacture of gelled **electrolyte**)
- IT Quaternary ammonium compounds, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**electrolytes**; composition containing monovinyl monomer and **urethane** group-containing dimethacrylate for manufacture of gelled **electrolyte**)
- IT Polymerization catalysts
(radical; composition containing monovinyl monomer and **urethane** group-containing dimethacrylate for manufacture of gelled **electrolyte**)
- IT 444046-30-4P 444046-31-5P 444046-32-6P 444046-33-7P 444046-34-8P 444046-35-9P
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(composition containing monovinyl monomer and **urethane** group-containing dimethacrylate for manufacture of gelled **electrolyte**)
- IT 429-06-1, Tetraethylammonium tetrafluoroborate
RL: TEM (Technical or engineered material use); USES (Uses)
(**electrolyte**; composition containing monovinyl monomer and **urethane** group-containing dimethacrylate for manufacture of gelled **electrolyte**)
- IT 15520-11-3, Peroxyl TCP
RL: CAT (Catalyst use); USES (Uses)
(polymerization catalyst; composition containing monovinyl monomer and **urethane** group-containing dimethacrylate for manufacture of gelled **electrolyte**)
- IT 15520-11-3, Peroxyl TCP
RL: CAT (Catalyst use); USES (Uses)
(polymerization catalyst; composition containing monovinyl monomer and **urethane** group-containing dimethacrylate for manufacture of gelled **electrolyte**)
- RN 15520-11-3 HCAPLUS
CN Peroxydicarbonic acid, bis[4-(1,1-dimethylethyl)cyclohexyl] ester (9CI)
(CA INDEX NAME)



L60 ANSWER 9 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2001:868585 HCAPLUS
 DN 136:9087
 TI Gel composition, ion conductive gel composition, and battery and electrochemical element thereof
 IN Takaoka, Kazuchiyo; Matsuyama, Mutsuhiro; Hyodo, Kenji; Aizawa, Wakana; Hino, Takakazu; Suzuki, Naoki
 PA Mitsubishi Paper Mills Limited, Japan; Nippon Unicar Company Limited
 SO PCT Int. Appl., 70 pp.
 CODEN: PIXXD2
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001090249	A1	20011129	WO 2001-JP4314	20010523
	W: DE, JP, US				
	DE 10192114	T	20020919	DE 2001-10192114	20010523
	US 2004129916	A1	20040708	US 2002-31749	20020524
PRAI	JP 2000-153694	A	20000524		
	JP 2000-371594	A	20001206		
	WO 2001-JP4314	W	20010523		
GI					



AB The gel composition contains an addition product of a linear addition copolymer of I
 [R1 = H or (substituted) hydrocarbon groups; R2 = bivalent (substituted) hydrocarbon or silylene groups or a bond, Z1 = bivalent O or hetero atom containing organic groups or a bond] and II [R3 = (substituted) hydrocarbon groups; R4 = bivalent (substituted) hydrocarbon or silylene groups or a bond, Z2 = bivalent joining group organic, phosphoric acid group, or a bond] or R3R5SiH2 [R5 = (substituted) hydrocarbon group] having 2 hydrosilyl termianl groups and a compound having ≥3 ethylenic double bond III [R6 = H, (substituted) hydrocarbon groups, R7 = bivalent (substituted) hydrocarbon groups, which may contain hetero atoms, or a bond, n1 = integer ≥3, Z3 = n1 valent joining group or bonds], prepared in the presence or absence of I and/or II, and a solvent. The ion conductive **gel** contains an **electrolyte** and the **gel** composition
 The electrochem. element is a photoelectrochem. cell, a capacitors, or an electrochromic devices. The battery and the electrochem element use the ion conductive **gel** as **electrolyte**.
 IC ICM C08L083-16
 ICS H01B001-06; H01M006-18; H01G009-038; H01M010-40
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 ST battery ion conductive **gel electrolyte** compn;
 electrochem element ion conductive **gel electrolyte**
 compn
 IT Battery **electrolytes**
 Electrochromic devices
 Photoelectrochemical cells

(comps. of polymer gels and **gel electrolytes** for batteries and electrochem. devices)

IT Capacitors
(double layer; comps. of polymer gels and **gel electrolytes** for batteries and electrochem. devices)

IT Polymers, uses
RL: DEV (Device component use); USES (Uses)
(gel; comps. of polymer gels and **gel electrolytes** for batteries and electrochem. devices)

IT 75-05-8, Acetonitrile, uses 96-48-0, γ -Butyrolactone 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 429-06-1, Tetraethylammonium tetrafluoroborate 622-06-0, Dibenzyl maleate 624-48-6, Dimethyl maleate 21324-40-3, Lithium hexafluorophosphate 90076-65-6 127171-87-3, Tetramethylammonium phthalate, uses 143314-16-3 375379-41-2 376353-45-6 376353-46-7 376361-71-6 376388-79-3 376388-84-0 376388-89-5 376388-92-0 376388-97-5 376389-01-4 376389-02-5 **376389-05-8**
RL: DEV (Device component use); USES (Uses)
(comps. of polymer gels and **gel electrolytes** for batteries and electrochem. devices)

IT **376389-05-8**
RL: DEV (Device component use); USES (Uses)
(comps. of polymer gels and **gel electrolytes** for batteries and electrochem. devices)

RN 376389-05-8 HCAPLUS

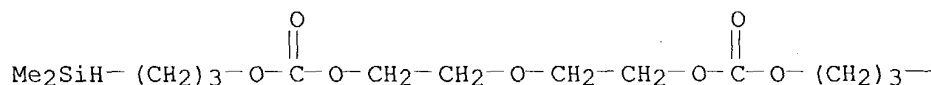
CN 2,5,8,10-Tetraoxa-14-silapentadecanoic acid, 14-methyl-9-oxo-, 3-(dimethylsilyl)propyl ester, polymer with methyloxirane polymer with oxirane ether with 2,2-bis(hydroxymethyl)-1,3-propanediol (4:1) tetra-2-propenyl ether (9CI) (CA INDEX NAME)

CM 1

CRN 376389-04-7

CMF C16 H34 O7 Si2

PAGE 1-A



PAGE 1-B

-SiHMe₂

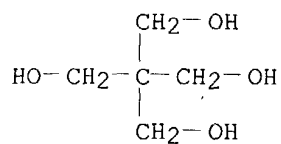
CM 2

CRN 374773-64-5

CMF C5 H12 O4 . 4 (C3 H6 O . C2 H4 O)x . 4 C3 H6 O

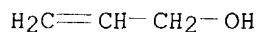
CM 3

CRN 115-77-5
CMF C5 H12 O4



CM 4

CRN 107-18-6
CMF C3 H6 O

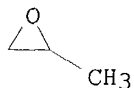


CM 5

CRN 9003-11-6
CMF (C3 H6 O . C2 H4 O)x
CCI PMS

CM 6

CRN 75-56-9
CMF C3 H6 O



CM 7

CRN 75-21-8
CMF C2 H4 O



RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L60 ANSWER 10 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:868016 HCAPLUS
DN 136:9079
TI Solid or **gel electrolyte** for battery
IN Keduka, Koichiro; Endo, Takahiro
PA Sony Corporation, Japan

KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505

SO Eur. Pat. Appl., 13 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1158592	A2	20011128	EP 2001-112019	20010523
	EP 1158592	A3	20030903		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 2001332304	A2	20011130	JP 2000-152473	20000524
	US 2002031710	A1	20020314	US 2001-862621	20010522
	US 6699622	B2	20040302		
	TW 518791	B	20030121	TW 2001-90112256	20010522
	CN 1325147	A	20011205	CN 2001-122180	20010524
PRAI	JP 2000-152473	A	20000524		

AB Disclosed is an electrolyte capable of obtaining an excellent quality of electrolyte, and a battery using the electrolyte. A battery device in which a pos. electrode and a neg. electrode are stacked with a separator being interposed there between is enclosed inside an exterior member. The separator is impregnated with an electrolyte. The electrolyte contains a high polymer, a plasticizer, a lithium and at least either carboxylic acid or carboxylate. Therefore, when preparing a high polymer by means of polymerization

of monomers, the polymerization of monomers can be smoothly processed even if there is a factor for inhibiting reaction such as copper. As a result, the amount of non-reacted monomers remained in the electrolyte can be suppressed to be extremely small. Therefore, decomposition and reaction of monomers are suppressed even after repeating charging/discharging, so that the deterioration in the charging/discharging efficiency and the charging/discharging characteristic can be prevented.

IC ICM H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

Section cross-reference(s): 38

ST battery solid **gel electrolyte**

IT Carboxylic acids, uses

RL: DEV (Device component use); USES (Uses)
(alkaline earth salts; solid or **gel electrolyte** for battery)

IT Carboxylic acids, uses

RL: DEV (Device component use); USES (Uses)
(alkali metal salts; solid or **gel electrolyte** for battery)

IT Carboxylic acids, uses

RL: DEV (Device component use); USES (Uses)
(aromatic; solid or **gel electrolyte** for battery)

IT Fluoropolymers, uses

RL: TEM (Technical or engineered material use); USES (Uses)
(binder; solid or **gel electrolyte** for battery)

IT Alkaline earth salts

RL: DEV (Device component use); USES (Uses)
(carboxylates; solid or **gel electrolyte** for battery)

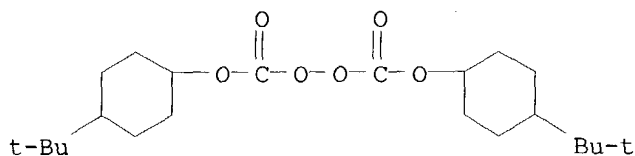
IT Secondary batteries

(lithium; solid or **gel electrolyte** for battery)

IT Battery **electrolytes**

Plasticizers
(solid or **gel electrolyte** for battery)

- IT Carbonaceous materials (technological products)
Carboxylic acids, uses
RL: DEV (Device component use); USES (Uses)
(solid or **gel electrolyte** for battery)
- IT 24937-79-9, Polyvinylidene fluoride
RL: TEM (Technical or engineered material use); USES (Uses)
(binder; solid or **gel electrolyte** for battery)
- IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7,
Propylene carbonate
RL: MOA (Modifier or additive use); USES (Uses)
(plasticizer; solid or **gel electrolyte** for battery)
- IT 57-10-3, Palmitic acid, uses 57-11-4, Stearic acid, uses 64-18-6,
Formic acid, uses 64-19-7, Acetic acid, uses 65-85-0, Benzoic acid,
uses 100-21-0, Terephthalic acid, uses 107-92-6, Butyric acid, uses
124-04-9, Adipic acid, uses 124-07-2, Octanoic acid, uses 141-82-2,
Malonic acid, uses 142-62-1, Hexanoic acid, uses 142-72-3, Magnesium
acetate 143-07-7, Lauric acid, uses 144-62-7, Oxalic acid, uses
334-48-5, Decanoic acid 335-67-1, Perfluoro-n-octanoic acid 335-67-1D,
salts 544-63-8, Myristic acid, uses 546-89-4, Lithium acetate
547-66-0, Magnesium oxalate 553-54-8, Lithium benzoate 553-70-8,
Magnesium benzoate 553-91-3, Lithium oxalate 556-63-8, Lithium formate
557-04-0, Magnesium stearate 557-39-1, Magnesium formate 3386-57-0,
Magnesium octanoate 4485-12-5, Lithium stearate 7429-90-5, Aluminum,
uses 7439-93-2D, Lithium, alkylmonocarboxylate 7440-50-8, Copper, uses
7486-39-7, Magnesium adipate 7782-42-5, Graphite, uses 9003-07-0,
Polypropylene 16577-52-9, Lithium octanoate 17125-58-5 18621-94-8,
Lithium adipate 21324-40-3, Lithium hexafluorophosphate 28313-49-7,
Lithium terephthalate 29126-49-6 30687-87-7, Magnesium terephthalate
54587-61-0, Magnesium malonate 64022-33-9 376354-29-9
RL: DEV (Device component use); USES (Uses)
(solid or **gel electrolyte** for battery)
- IT 7439-93-2, Lithium, uses
RL: DEV (Device component use); PEP (Physical, engineering or chemical
process); PROC (Process); USES (Uses)
(solid or **gel electrolyte** for battery)
- IT 12190-79-3P, Cobalt lithium oxide colio2
RL: DEV (Device component use); SPN (Synthetic preparation); PREP
(Preparation); USES (Uses)
(solid or **gel electrolyte** for battery)
- IT 15520-11-3, Bis(4-tert-butylcyclohexyl) peroxydicarbonate
RL: RCT (Reactant); RACT (Reactant or reagent)
(solid or **gel electrolyte** for battery)
- IT 15520-11-3, Bis(4-tert-butylcyclohexyl) peroxydicarbonate
RL: RCT (Reactant); RACT (Reactant or reagent)
(solid or **gel electrolyte** for battery)
- RN 15520-11-3 HCAPLUS
- CN Peroxydicarbonic acid, bis[4-(1,1-dimethylethyl)cyclohexyl] ester (9CI)
(CA INDEX NAME)



L60 ANSWER 11 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2000:531594 HCAPLUS

DN 133:122779

TI Fabrication and use of crosslinked polymer film for a separator of electrochemical apparatus

IN Takeuchi, Masataka; Naijo, Shuichi; Ohkubo, Takashi

PA Showa Denko K. K., Japan

SO U.S., 33 pp., Cont.-in-part of U.S. Ser. No. 723,251, abandoned.

CODEN: USXXAM

DT Patent

LA English

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6096456	A	20000801	US 1997-934902	19970922
	JP 09153354	A2	19970610	JP 1996-253082	19960925
PRAI	JP 1995-253957	A	19950929		
	US 1996-14568P	P	19960401		
	US 1996-723251	B2	19960930		

AB This invention provides a film comprising a crosslinked polymer having an oxyalkylene group or a crosslinked polymer having an oxyalkylene group through a **urethane** bond, as a constituent component, a production method of the film, and an electrochem. apparatus using the film as a separator. The film for separator of an electrochem. apparatus can be easily and uniformly processed, can include an electrolytic solution, exhibits good film thickness and ensures excellent safety and reliability. The electrochem. apparatus is free of leakage of the solution

IC ICM H01M002-16

NCL 429249000

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 35, 38, 76

ST **battery** separator crosslinked polymer film; capacitor separator crosslinked polymer film; safety separator crosslinked polymer film

IT Secondary **battery** separators

(fabrication and use of crosslinked polymer film for separator of electrochem. apparatus)

IT Alkali metal salts

Phosphonium compounds

Polyurethanes, uses

Quaternary ammonium compounds, uses

RL: DEV (Device component use); USES (Uses)

(fabrication and use of crosslinked polymer film for separator of electrochem. apparatus)

IT Secondary **batteries**

(lithium; fabrication and use of crosslinked polymer film for separator of electrochem. apparatus)

IT **Polyurethanes**, uses

RL: DEV (Device component use); USES (Uses)

(polyoxyalkylene-; fabrication and use of crosslinked polymer film for separator of electrochem. apparatus)

IT 78-67-1 7473-98-5, Darocur 1173 9003-07-0, Polypropylene

15520-11-3, Bis(4-tert-butylcyclohexyl)peroxy dicarbonate

24650-42-8, Irgacure 651 25038-59-9, Polyethylene terephthalate, uses

285562-13-2, Micropearl SP 213

RL: TEM (Technical or engineered material use); USES (Uses)

(fabrication and use of crosslinked polymer film for separator of electrochem. apparatus)

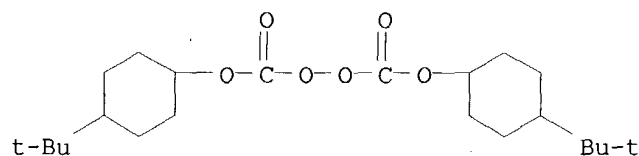
IT **15520-11-3**, Bis(4-tert-butylcyclohexyl)peroxy dicarbonate

RL: TEM (Technical or engineered material use); USES (Uses)

(fabrication and use of crosslinked polymer film for separator of electrochem. apparatus)

RN 15520-11-3 HCAPLUS

CN Peroxydicarbonic acid, bis[4-(1,1-dimethylethyl)cyclohexyl] ester (9CI)
(CA INDEX NAME)



RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L60 ANSWER 12 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2000:368489 HCAPLUS

DN 133:18277

TI Ionically conductive compositions and cells made from them

IN Takaoka, Kazuchiyo; Ikegami, Koshiro; Hyodo, Kenji; Watanabe, Hiroaki;
Hino, Takakazu; Shikano, Naoki; Andou, Eiji

PA Mitsubishi Paper Mills Ltd., Japan; Nippon Unicar Co., Ltd.

SO PCT Int. Appl., 73 pp.

CODEN: PIXXD2

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000031186	A1	20000602	WO 1999-JP5707	19991015
	W: DE, JP, US				
	JP 2000154254	A2	20000606	JP 1998-331521	19981120
	DE 19982656	T	20010517	DE 1999-19982656	19991015
	US 6589383	B1	20030708	US 2000-600640	20000720
PRAI	JP 1998-331521	A	19981120		
	WO 1999-JP5271	W	19990928		
	WO 1999-JP5707	W	19991015		

AB The comps. comprise linear copolymers derived from compds. A and B both bearing 2 functional groups and preferably crosslinked, and an **electrolyte**. Thus, mixing GO-p-C6H4CH2-p-C6H4OCH2CHOHCH2O-p-C6H4CH2-p-C6H4OG (G = glycidyl group) 56.8 with 3,9-bis(3-aminopropyl)-2,4,8,10-teraoxaspiro[5.5]undecane 27.4, tetrabutylammonium perchlorate 10, and DMF 80 parts and heating at 100° for 6 h gave an ionically conductive gel composition with conductivity 5x10⁻⁵ S/cm.

IC ICM C08L101-02

ICS C08L083-10; H01B001-06; H01B001-12

CC 37-3 (Plastics Manufacture and Processing)

Section cross-reference(s): 52

ST epoxy amine adduct polymer conductive compn elec cell; **battery**
cell elec conductive compn

IT **Electrolytes**

(ionically conductive compns. and cells made from them)

IT Secondary **batteries**

(lithium; ionically conductive compns. and cells made from them)

IT **Polyurethanes**, preparation

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or

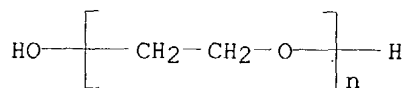
- engineered material use); PREP (Preparation); USES (Uses)
(polyoxyalkylene-, gel; ionically conductive compns. and cells made from them)
- IT 171483-98-ODP, Dimethylsilanediol-ethylene oxide-methylsilanediol graft copolymer methyl ether, trimethylsilyl-terminated **271790-67-1P**
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(blends; ionically conductive compns. and cells made from them)
- IT 1923-70-2, Tetrabutylammonium perchlorate 7791-03-9, Lithium perchlorate 14283-07-9, Lithium tetrafluoroborate 21324-40-3, Lithium hexafluorophosphate 90076-65-6, Lithium bis(trifluoromethylsulfonyl)amide
RL: TEM (Technical or engineered material use); USES (Uses)
(**electrolytes**; ionically conductive compns. and cells made from them)
- IT 1189-93-1DP, 1,1,3,3,5,5-Hexamethyltrisiloxane, polymers with ethylenically unsatd. monomers and polysiloxanes 1469-70-1DP, Allyl ethyl carbonate, reaction products with polysiloxanes 17832-16-5DP, Triallyl trimesate, polymers with ethylenically unsatd. group-containing monomers and hydrogen-terminated polysiloxanes 60120-15-2DP, polymers with ethylenically unsatd. group-containing monomers and hydrogen-terminated polysiloxanes 60120-15-2DP, polymers with ethylenically unsatd. compds. and siloxanes 134196-67-1DP, polymers with polysiloxanes 141668-87-3DP, polymers with ethylenically unsatd. group-containing monomers and hydrogen-terminated polysiloxanes 156118-35-3DP, hydrogen-terminated, polymers with ethylenically unsatd. group-containing monomers 156309-05-6P, Dimethylsilanediol-ethylene oxide-propylene oxide block copolymer 176896-14-3DP, Dimethylsilanediol-ethylene oxide-propylene oxide block graft copolymer, trimethylsilyl-terminated 271790-78-4DP, polymers with ethylenically unsatd. group-containing monomers and hydrogen-terminated polysiloxanes 271790-80-8DP, polymers with ethylenically unsatd. group-containing monomers and hydrogen-terminated polysiloxanes 272109-74-7P 272109-75-8P 272109-76-9P **272109-77-0P** 272109-78-1P 272109-79-2P 272109-80-5P 272109-81-6P
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(gel; ionically conductive compns. and cells made from them)
- IT 271790-63-7P **272109-72-5P**
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(ionically conductive compns. and cells made from them)
- IT **271790-72-8**
RL: MOA (Modifier or additive use); USES (Uses)
(ionically conductive compns. and cells made from them)
- IT **271790-67-1P**
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(blends; ionically conductive compns. and cells made from them)
- RN 271790-67-1 HCAPLUS
- CN 1,3,5-Triazine-2,4,6(1H,3H,5H)-trione, 1,3,5-tris(3-isocyanato-4-methylphenyl)-, polymer with α -hydro- ω -hydroxypoly(oxy-1,2-ethanediyl) and 1,1'-methylenebis[4-isocyanatobenzene] (9CI) (CA INDEX NAME)

CM 1

CRN 25322-68-3

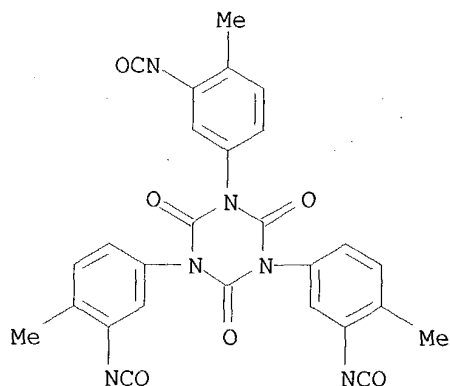
CMF (C2 H4 O)n H2 O

CCI PMS



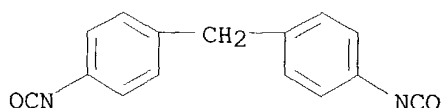
CM 2

CRN 20649-91-6
CMF C27 H18 N6 O6



CM 3

CRN 101-68-8
CMF C15 H10 N2 O2



IT 272109-77-0P

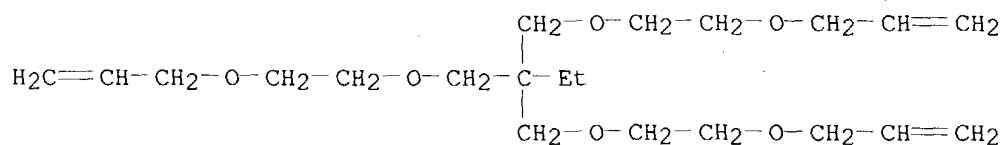
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(gel; ionically conductive compns. and cells made from them)

RN 272109-77-0 HCAPLUS

CN 2,5,8,10-Tetraoxatridec-12-enoic acid, 9-oxo-, 2-propenyl ester, polymer with α -(dimethylsilyl)- ω -[(dimethylsilyl)oxy]poly[oxy(dimethylsilylene)], 9-ethyl-9-[[2-(2-propenyloxy)ethoxy]methyl]-4,7,11,14-tetraoxaheptadeca-1,16-diene and methyloxirane polymer with oxirane bis(2-methyl-2-propenyl) ether (9CI) (CA INDEX NAME)

CM 1

CRN 134196-67-1
CMF C21 H38 O6

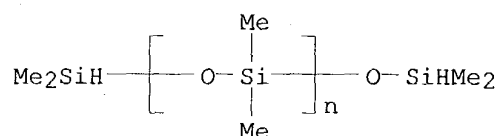


CM 2

CRN 115254-29-0

CMF (C2 H6 O Si)_n C4 H14 O Si2

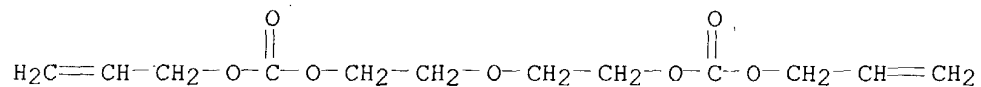
CCI PMS



CM 3

CRN 142-22-3

CMF C12 H18 O7



CM 4

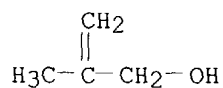
CRN 71061-26-2

CMF C4 H8 O . 1/2 (C3 H6 O . C2 H4 O)_x

CM 5

CRN 513-42-8

CMF C4 H8 O



CM 6

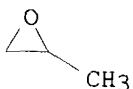
CRN 9003-11-6

CMF (C3 H6 O . C2 H4 O)_x

CCI PMS

CM 7

CRN 75-56-9
CMF C3 H6 O



CM 8

CRN 75-21-8
CMF C2 H4 O



IT 272109-72-5P

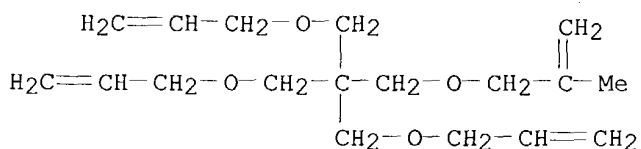
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(ionically conductive compns. and cells made from them)

RN 272109-72-5 HCAPLUS

CN 2,5,8,10-Tetraoxatridec-12-enoic acid, 9-oxo-, 2-propenyl ester, polymer with α -(dimethylsilyl)- ω -[(dimethylsilyl)oxy]poly[oxy(dimethylsilylene)], 1,1,3,3,5,5-hexamethyltrisiloxane, methyloxirane polymer with oxirane di-2-propenyl ether, and 2-methyl-3-[3-(2-propenyloxy)-2,2-bis[(2-propenyloxy)methyl]propoxy]-1-propene (9CI) (CA INDEX NAME)

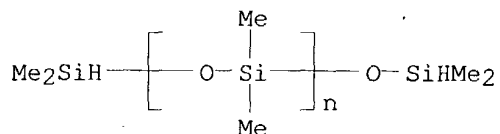
CM 1

CRN 272109-71-4
CMF C18 H30 O4



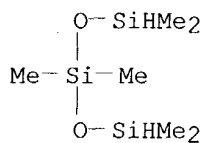
CM 2

CRN 115254-29-0
CMF (C2 H6 O Si)_n C4 H14 O Si2
CCI PMS



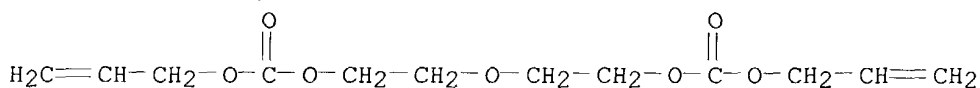
CM 3

CRN 1189-93-1
CMF C6 H20 O2 Si3



CM 4

CRN 142-22-3
CMF C12 H18 O7

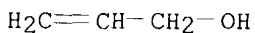


CM 5

CRN 60120-15-2
CMF (C3 H6 O . C2 H4 O)x . 2 C3 H6 O

CM 6

CRN 107-18-6
CMF C3 H6 O



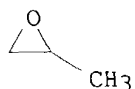
CM 7

CRN 9003-11-6
CMF (C3 H6 O . C2 H4 O)x
CCI PMS

CM 8

CRN 75-56-9

CMF C3 H6 O



CM 9

CRN 75-21-8
CMF C2 H4 O



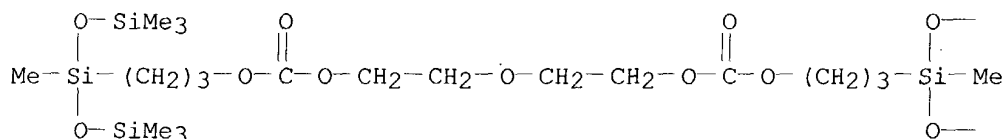
IT 271790-72-8

RL: MOA (Modifier or additive use); USES (Uses)
(ionically conductive compns. and cells made from them)

RN 271790-72-8 HCAPLUS

CN 3,8,10,13,16-Pentaoxa-2,4-disilaheptadecan-17-oic acid,
2,2,4-trimethyl-9-oxo-4-[(trimethylsilyl)oxy]-, 3-[1,3,3,3-tetramethyl-1-
[(trimethylsilyl)oxy]disiloxanyl]propyl ester (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B

—SiMe₃

—SiMe₃

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L60 ANSWER 13 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2000:198059 HCAPLUS

DN 132:251890

TI Thermally polymerizable compositions and their use in **batteries**
and double-layer capacitors

IN Takeuchi, Masataka; Naijo, Shuichi

PA Showa Denko K. K., Japan

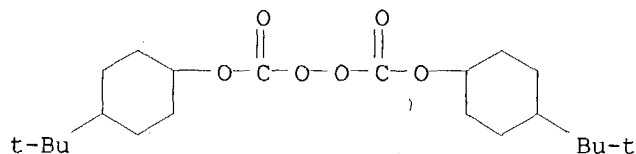
SO Jpn. Kokai Tokkyo Koho, 21 pp.

CODEN: JKXXAF

DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000086711	A2	20000328	JP 1998-263203	19980917
	US 6562513	B1	20030513	US 1999-391155	19990908
PRAI	JP 1998-263203	A	19980917		
AB	<p>The compns. comprise thermally polymerizable (meth)acrylate compds. which bear oxyalkylene, fluorocarbyl, oxyfluorocarbyl or/and carbonate groups, electrolyte salts, benzene ring-free initiators and polymerization inhibitors containing vinyl groups. The compns. are useful for solid electrolytes of primary and secondary batteries or elec. double-layer capacitors. Thus, reacting an ethylene oxide-propylene oxide copolymer glycerol ether with 2-isocyanatoethyl methacrylate gave a derivative, 1.0 g of which was combined with di-Et carbonate 5.0, ethylene carbonate 2.0, LiPF₆ 1.00, Nofmer MSD (polymerization inhibitor)</p>				
0.0018	<p>and Perhexyl PV (peracid catalyst) 0.018 g, cast between 2 fluorinated Ca plates and heated to give a solid polymer.</p>				
IC	ICM C08F002-40				
	ICS C08F002-44; C08F020-10; C08K003-10; C08K005-19; H01B001-06; H01G009-025; H01M006-18; H01M010-40				
CC	37-4 (Plastics Manufacture and Processing)				
	Section cross-reference(s): 76				
ST	electrolyte methacrylate polyoxyalkylene pendant thermally polymerizable polymer; inhibitor vinyl compn thermally polymerizable compn electrolyte				
IT	Capacitors				
	(double layer; thermally polymerizable compns. and use in batteries and double-layer capacitors)				
IT	Primary batteries				
	Secondary batteries				
	Solid electrolytes				
	(thermally polymerizable compns. and use in batteries and double-layer capacitors)				
IT	Polymerization inhibitors				
	(vinyl group-containing compds.; thermally polymerizable compns. and use in batteries and double-layer capacitors)				
IT	21324-40-3, Lithium hexafluorophosphate (LiPF ₆)				
	RL: MOA (Modifier or additive use); USES (Uses)				
	(electrolytes; thermally polymerizable compns. and use in batteries and double-layer capacitors)				
IT	76363-90-1P, Ethoxylated propoxylated glycerol triester with 2-(isocyanato)ethyl methacrylate 79176-98-0P, Ethylene oxide-propylene oxide copolymer butyl ether, ester with 2-(isocyanato)ethyl methacrylate				
	RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)				
	(macromer; thermally polymerizable compns. and use in batteries and double-layer capacitors)				
IT	20215-51-4P				
	RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)				
	(monomer; thermally polymerizable compns. and use in batteries and double-layer capacitors)				
IT	228863-58-9P, 1,3-Propylene glycol di(chlorocarbonate)-1,3-propylene glycol copolymer				
	RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT				

- (Reactant or reagent)
(oligomeric, intermediate; thermally polymerizable compns. and use in **batteries** and double-layer capacitors)
- IT 262370-83-2P, 1,3-Propylene glycol di(chlorocarbonate)-1,3-propylene glycol copolymer, diester with 2-(**isocyanato**)ethyl methacrylate
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(oligomeric, monomer; thermally polymerizable compns. and use in **batteries** and double-layer capacitors)
- IT 50862-75-4P, 1,3-Propylene glycol di(chlorocarbonate)-1,3-propylene glycol copolymer, sru 226225-64-5P, 1,3-Propylene glycol di(chlorocarbonate)-1,3-propylene glycol copolymer sru, diester with 2-(**isocyanato**)ethyl methacrylate
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(oligomeric; thermally polymerizable compns. and use in **batteries** and double-layer capacitors)
- IT 15520-11-3, Peroyl TCP 22288-43-3, Perocta O 51938-28-4, Perhexyl PV
RL: CAT (Catalyst use); USES (Uses)
(polymerization catalyst; thermally polymerizable compns. and use in **batteries** and double-layer capacitors)
- IT 6362-80-7, Nofmer MSD
RL: MOA (Modifier or additive use); USES (Uses)
(polymerization inhibitors; thermally polymerizable compns. and use in **batteries** and double-layer capacitors)
- IT 197526-73-1P, Ethoxylated propoxylated glycerol triester with 2-(**isocyanato**)ethyl methacrylate, homopolymer 262290-79-9P, 1,3-Propylene glycol di(chlorocarbonate)-1,3-propylene glycol copolymer sru, diester with 2-(**isocyanato**)ethyl methacrylate, homopolymer 262370-82-1P, Ethylene oxide-propylene oxide copolymer butyl ether, ester with 2-(**isocyanato**)ethyl methacrylate, homopolymer 262370-84-3P, 1,3-Propylene glycol di(chlorocarbonate)-1,3-propylene glycol copolymer, diester with 2-(**isocyanato**)ethyl methacrylate, homopolymer
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(thermally polymerizable compns. and use in **batteries** and double-layer capacitors)
- IT 15520-11-3, Peroyl TCP
RL: CAT (Catalyst use); USES (Uses)
(polymerization catalyst; thermally polymerizable compns. and use in **batteries** and double-layer capacitors)
- RN 15520-11-3 HCAPLUS
CN Peroxydicarbonic acid, bis[4-(1,1-dimethylethyl)cyclohexyl] ester (9CI)
(CA INDEX NAME)



AN 1999:620548 HCAPLUS
 DN 131:245549
 TI Ion-conducting polymer **gel electrolytes** and batteries
 using them
 IN Taniuchi, Masahiro; Kato, Ikuo; Kahata, Toshiyuki; Fujii, Toshishige
 PA Ricoh Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 11 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11265616	A2	19990928	JP 1998-89315	19980318
PRAI	JP 1998-89315		19980318		

AB The title **gel electrolytes** contain thermal polymerization initiators having half-life ≤ 2 h at temperature lower than b.p. of a solvent having lowest b.p. in solvents for the gels. Batteries using the above gels are also claimed. The **gel electrolytes** have high ion conductivity and strength and suppress decrease of energy d. in repeated use.

IC ICM H01B001-12
 ICS H01M006-18; H01M006-22; H01M010-40; C08L033-04
 CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
 Section cross-reference(s): 38, 76

ST ion conducting polymer **gel electrolyte** battery;
 thermal polymn initiator **gel electrolyte** solvent

IT Solvents
 (ion-conducting polymer **gel electrolytes** using
 thermal polymerization initiators and specified solvents for batteries)

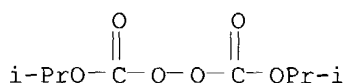
IT Battery **electrolytes**
 Conducting polymers
 Ionic conductors
 Polymer **electrolytes**
 Polymerization catalysts
 (ion-conducting polymer **gel electrolytes** using
 thermal polymerization initiators for batteries)

IT Secondary batteries
 (lithium; ion-conducting polymer **gel electrolytes**
 using thermal polymerization initiators for batteries)

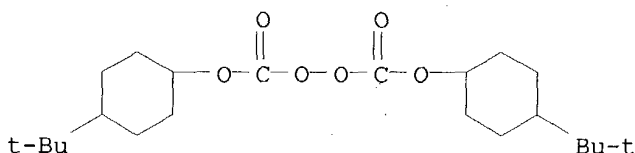
IT 78-67-1, 2,2'-Azobisisobutyronitrile 94-36-0, Benzoyl peroxide, uses
105-64-6, Diisopropylperoxydicarbonate **15520-11-3**,
 Bis(4-t-butylcyclohexyl)peroxydicarbonate
 RL: CAT (Catalyst use); USES (Uses)

(catalysts; ion-conducting polymer **gel electrolytes**
 using thermal polymerization initiators for batteries)
 IT 7439-93-2DP, Lithium, acrylic polyoxyalkylene complexes, uses
 28961-43-5DP, Ethoxylated trimethylolpropane triacrylate, polymers with
 methoxypropylene glycol acrylate, lithium complexes 65744-44-7DP,
 lithium complexes 86469-77-4DP, lithium complexes 185383-24-8DP,
 Methyl-diethylene glycol acrylate-trimethylolpropane triacrylate copolymer,
 lithium complexes 187941-84-0DP, Ethoxylated trimethylolpropane
 triacrylate-methyl-diethylene glycol acrylate copolymer, lithium complexes
 211796-46-2DP, Ethyl-diethylene glycol methacrylate-propoxylated
 trimethylolpropane triacrylate copolymer, lithium complexes
 244298-33-7DP, Ethylene glycol dimethacrylate-methyl-diethylene glycol
 acrylate copolymer, lithium complexes
 RL: DEV (Device component use); PNU (Preparation, unclassified); TEM
 (Technical or engineered material use); PREP (Preparation); USES (Uses)

(ion-conducting polymer **gel electrolytes** using thermal polymerization initiators for batteries)
 IT 96-49-1, Ethylene carbonate 105-58-8, Diethylcarbonate 108-32-7, Propylene carbonate 110-71-4 616-38-6, Dimethylcarbonate 156783-95-8 167951-80-6
 RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
 (solvents; ion-conducting polymer **gel electrolytes** using thermal polymerization initiators and specified solvents for batteries)
 IT 105-64-6, Diisopropylperoxydicarbonate 15520-11-3, Bis(4-t-butylcyclohexyl)peroxydicarbonate
 RL: CAT (Catalyst use); USES (Uses)
 (catalysts; ion-conducting polymer **gel electrolytes** using thermal polymerization initiators for batteries)
 RN 105-64-6 HCAPLUS
 CN Peroxydicarbonic acid, bis(1-methylethyl) ester (9CI) (CA INDEX NAME)



RN 15520-11-3 HCAPLUS
 CN Peroxydicarbonic acid, bis[4-(1,1-dimethylethyl)cyclohexyl] ester (9CI) (CA INDEX NAME)



L60 ANSWER 15 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1999:350546 HCAPLUS
 DN 131:32530
 TI Thermally polymerizable composition and its application
 IN Naijo, Shuichi; Tokita, Koji; Takeuchi, Masataka
 PA Showa Denko K. K., Japan
 SO Jpn. Kokai Tokkyo Koho, 19 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11147989	A2	19990602	JP 1998-112280	19980422
	US 2001011119	A1	20010802	US 1998-84598	19980527
	US 6316563	B2	20011113		
	US 2002161146	A1	20021031	US 2001-931765	20010820
PRAI	JP 1997-136947	A	19970527		
	JP 1997-245613	A	19970910		
	US 1997-64731P	P	19971106		
	US 1998-84598	A3	19980527		

AB The thermally polymerizable composition comprises ≥ 1 thermally polymerizable compound which forms a crosslinked polymer and/or a polymer having a side chain, ≥ 1 **electrolyte**, and ≥ 1 polymerization initiator, wherein the thermally polymerizable compound is represented by $H_2C=C(R_1)C(:O)OR_2-$ and/or $H_2C=C(R_3)C(:O)[OR_4]_xNHC(:O)OR_5-$ ($R_1, 3 = H, \text{ alkyl}$; $R_2, 5 = \text{oxyalkylene, fluorocarbon; etc.}$; $R_4 = C \leq 10$ divalent group; $x = 1-10$) and the polymerization initiator is represented by $XC(:O)OO(C:O)m(O)nY$ ($X = \text{alkyl, alkoxy}$; $Y = \text{alkyl}$; $m, n = 0, 1$). The composition forms a polymer solid **electrolyte** upon polymerization, and is used for an elec. double-layer capacitor.

IC ICM C08L033-14
ICS C08K003-16; C08K003-24; C08K003-32; C08K003-38; C08K005-19; C08K005-43; C08K005-50; C08L033-24; H01B001-12; H01G009-025; H01M006-18; H01M010-40; C08F004-34; C08F020-22; C08F020-26; C08F020-34; C08F020-52

CC 37-6 (Plastics Manufacture and Processing)
Section cross-reference(s): 76

ST thermally polymerizable compn polymer solid **electrolyte**; elec double layer capacitor

IT Capacitors
Polymer **electrolytes**
Polymerization catalysts
(thermally polymerizable composition for elec. double-layer capacitor)

IT **Polyurethanes**, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(thermally polymerizable composition for elec. double-layer capacitor)

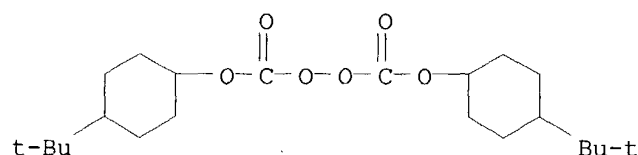
IT **15520-11-3**, Bis(4-tert-butylcyclohexyl) peroxydicarbonate
RL: CAT (Catalyst use); USES (Uses)
(polymerization initiator, Peroyl TCP; thermally polymerizable composition for
elec. double-layer capacitor)

IT 96-49-1DP, Ethylene carbonate, polymers with polyethylene-polypropylene glycerol ether-**isocyanatoethyl** methacrylate reaction product
105-58-8DP, Diethyl carbonate, polymers with polyethylene-polypropylene glycerol ether-**isocyanatoethyl** methacrylate reaction product
9082-00-2DP, Polyethylene-polypropylene glycol glycerol ether, reaction products with **isocyanatoethyl** methacrylate, polymers with carbonates 30674-80-7DP, 2-**Isocyanatoethyl** methacrylate, reaction products with polyethylene-polypropylene glycerol ether, polymers with carbonates 226225-65-6P
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(thermally polymerizable composition for elec. double-layer capacitor)

IT **15520-11-3**, Bis(4-tert-butylcyclohexyl) peroxydicarbonate
RL: CAT (Catalyst use); USES (Uses)
(polymerization initiator, Peroyl TCP; thermally polymerizable composition for
elec. double-layer capacitor)

RN 15520-11-3 HCAPLUS

CN Peroxydicarbonic acid, bis[4-(1,1-dimethylethyl)cyclohexyl] ester (9CI)
(CA INDEX NAME)



L60 ANSWER 16 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1998:474026 HCAPLUS
DN 129:151119
TI Secondary nonaqueous-**electrolyte battery**
IN Ito, Shuji; Murata, Toshihide; Bito, Yasuhiko; Toyoguchi, Yoshinori
PA Matsushita Electric Industrial Co., Ltd., Japan
SO Eur. Pat. Appl., 51 pp.
CODEN: EPXXDW
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 853347	A1	19980715	EP 1997-122297	19971217
	EP 853347	B1	20011024		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 10255796	A2	19980925	JP 1997-54947	19970310
	JP 3426901	B2	20030714		
	JP 10233208	A2	19980902	JP 1997-163285	19970604
	JP 3390327	B2	20030324		
	US 6124057	A	20000926	US 1997-993735	19971218
PRAI	JP 1996-341012	A	19961220		
	JP 1997-54947	A	19970310		
	JP 1997-163285	A	19970604		
AB	The anode active material of the title battery having a high capacity and excellent cycling characteristics comprises a salt of a metal or a semimetal and a compound selected from the oxo acids, HSCN, NCCN, and HCNO, where each oxo acid comprises an element selected N, S, C, B, P, Se, Te, W, Mo, Ti, Cr, Zr, Nb, Ta, Mn, and V, the salts of the oxo acids of P and B being restricted to hydrogen phosphates and hydrogen borates.				
IC	ICM H01M004-62 ICS H01M004-48; H01M004-58				
CC	52-2 (Electrochemical, Radiational, and Thermal Energy Technology)				
ST	nonaq electrolyte battery anode metal salt; semimetal salt nonaq electrolyte battery anode; oxo acid salt battery anode; thiocyanic acid salt battery anode; cyanogen salt battery anode; cyanic acid salt battery anode				
IT	Secondary batteries (high-performance lithium-ion)				
IT	Phosphates, uses Sulfates, uses RL: DEV (Device component use); USES (Uses) (hydrogen, metal and semimetal; anode active material for lithium-ion batteries)				
IT	Bicarbonates Borates Carbonates, uses				

Chromates
Cyanates
Cyanides (inorganic), uses
Manganates
Molybdates
Nitrates, uses
Nitrites
Phosphates, uses
Selenates
Selenites
Sulfates, uses
Sulfites
Thiocyanates
Thiosulfates
Titanates
Zirconates

RL: DEV (Device component use); USES (Uses)
(metal and semimetal; anode active material for lithium-ion
batteries)

IT Group VB element compounds

RL: DEV (Device component use); USES (Uses)
(niobates, metal and semimetal; anode active material for lithium-ion
batteries)

IT **Battery** anodes

(of metal or semimetal salts of cyanic acid or cyanogen or oxo acids or
thiocyanic acid)

IT Group VB element compounds

RL: DEV (Device component use); USES (Uses)
(tantallates, metal and semimetal; anode active material for lithium-ion
batteries)

IT Group VIA element compounds

RL: DEV (Device component use); USES (Uses)
(tellurates, metal and semimetal; anode active material for lithium-ion
batteries)

IT Group VB element compounds

RL: DEV (Device component use); USES (Uses)
(vanadates, metal and semimetal; anode active material for lithium-ion
batteries)

IT 306-61-6, Magnesium thiocyanate 471-34-1, Calcium carbonate, uses
513-77-9, Barium carbonate 513-78-0, Cadmium carbonate 513-79-1,
Cobalt carbonate CoCO_3 538-17-0, Aluminum thiocyanate 542-62-1, Barium
cyanide 542-83-6, Cadmium cyanide 542-84-7, Cobalt cyanide $(\text{Co}(\text{CN})_2)$
546-93-0, Magnesium carbonate 557-19-7, Nickel cyanide $(\text{Ni}(\text{CN})_2)$
557-21-1, Zinc cyanide 557-42-6, Zinc thiocyanate 563-71-3, Ferrous
carbonate 592-01-8, Calcium cyanide 592-05-2, Lead cyanide $\text{Pb}(\text{CN})_2$
592-87-0, Lead thiocyanate 598-62-9, Manganese carbonate 598-63-0,
Lead carbonate 865-38-3, Cadmium thiocyanate 1184-64-1, Cupric
carbonate 1633-05-2, Strontium carbonate 1948-47-6, Iron cyanide
 $(\text{Fe}(\text{CN})_2)$ 2090-64-4, Magnesium bicarbonate 2092-16-2, Calcium
thiocyanate 2092-17-3, Barium thiocyanate 2768-97-0, Indium
thiocyanate 3017-60-5 3227-61-0 3227-62-1 3251-23-8, Cupric
nitrate 3333-67-3, Nickel carbonate 3486-35-9, Zinc carbonate
3602-20-8, Tin thiocyanate 3999-98-2 4100-56-5, Magnesium cyanide
4367-08-2, Copper cyanide $(\text{Cu}(\text{CN})_2)$ 4756-59-6 4756-65-4, Aluminum
isocyanate 5702-63-6, Stibinetri-carbonitrile 6010-09-9
6449-00-9, Chromium carbonate $\text{Cr}_2(\text{CO}_3)_3$ 6860-10-2, Calcium dicyanate
7446-10-8, Lead sulfite PbSO_3 7446-14-2, Lead sulfate 7446-15-3
7487-88-9, Magnesium sulfate, uses 7488-51-9 7488-55-3 7720-78-7,
Ferrous sulfate 7727-43-7, Barium sulfate 7733-02-0, Zinc sulfate

7757-86-0 7757-88-2, Magnesium sulfite 7757-95-1, Nickel sulfite NiSO₃
 7758-97-6, Lead chromate PbCrO₄ 7758-98-7, Copper sulfate, uses
 7759-00-4 7759-01-5, Lead tungsten oxide (PbWO₄) 7759-02-6, Strontium
 sulfate 7778-18-9, Calcium sulfate 7779-86-4 7779-88-6, Zinc nitrate
 7784-22-7 7785-87-7, Manganese sulfate 7786-81-4, Nickel sulfate
 7787-39-5, Barium sulfite 7787-41-9 7787-68-0, Bismuth sulfate
 7789-14-2 7789-82-4, Calcium molybdate CaMoO₄ 7790-75-2, Calcium
 tungsten oxide (CaWO₄) 7790-83-2 7790-85-4, Cadmium tungsten oxide
 (CdWO₄) 10022-31-8, Barium nitrate 10026-23-0 10028-26-9
 10031-38-6 10042-76-9, Strontium nitrate 10043-01-3, Aluminum sulfate
 Al₂(SO₄)₃ 10048-98-3 10099-74-8 10099-79-3, Lead vanadium oxide
 (PbV₂O₆) 10101-52-7, Zirconium silicate (Zr_{0.5}(SiO₄)_{0.5}) 10101-53-8,
 Chromium sulfate 10101-96-9 10102-02-0, Zinc nitrite 10124-36-4,
 Cadmium sulfate 10124-37-5, Calcium nitrate 10124-43-3, Cobalt sulfate
 10124-53-5 10141-05-6 10174-28-4, Chromium tin oxide (CrSnO₄)
 10190-55-3, Lead molybdenum oxide (PbMoO₄) 10214-40-1 10257-55-3,
 Calcium sulfite 10294-58-3 10325-94-7 10343-61-0, Titanium sulfate
 Ti₂(SO₄)₃ 10361-44-1 10377-57-8 10377-60-3, Magnesium nitrate
 10377-66-9 11093-84-8, Indium titanium oxide (In₂TiO₅) 11120-61-9,
 Chromium tin oxide (CrSn₂O₆) 12013-45-5, Calcium niobium oxide (CaNb₂O₆)
 12013-47-7, Calcium zirconium oxide (CaZrO₃) 12013-95-5, Cadmium
 chromium oxide (CdCr₂O₄) 12014-14-1, Cadmium titanium oxide (CdTiO₃)
 12025-16-0, Germanium manganese oxide (GeMnO₃) 12032-31-4, Magnesium
 zirconium oxide (MgZrO₃) 12034-88-7, Lead niobium oxide (PbNb₂O₆)
 12034-89-8, Niobium strontium oxide (Nb₂SrO₆) 12036-39-4, Strontium
 zirconium oxide (SrZrO₃) 12036-43-0, Titanium zinc oxide (TiZnO₃)
 12048-51-0, Bismuth titanium oxide (Bi₂Ti₂O₇) 12048-52-1, Bismuth
 zirconium oxide (Bi₂Zr₃O₉) 12050-35-0, Cadmium tantalum oxide (Cd₂Ta₂O₇)
 12056-04-1, Indium tantalum oxide (InTaO₄) 12058-23-0, Molybdenum tin
 oxide (Mo₂SnO₈) 12059-64-2, Lead niobium oxide (Pb₂Nb₂O₇) 12060-00-3,
 Lead titanate PbTiO₃ 12060-01-4, Lead zirconium oxide (PbZrO₃)
 12064-15-2, Gallium manganese oxide (Ga₂MnO₄) 12065-82-6, Lead tantalum
 oxide (Pb₂Ta₂O₇) 12138-50-0, Calcium tungsten oxide (CaWO₃)
 12139-18-3, Cadmium manganese oxide (CdMnO₃) 12139-23-0, Cadmium
 zirconium oxide (CdZrO₃) 12143-37-2, Strontium tungsten oxide (SrWO₃)
 12143-52-1, Lead oxide selenate (Pb₂(SeO₄)) 12160-57-5, Gallium niobium
 oxide (GaNbO₄) 12163-26-7, Magnesium niobium oxide (MgNb₂O₆)
 12163-45-0, Manganese strontium oxide (MnSrO₃) 12169-18-5, Zinc
 zirconium oxide (ZnZrO₃) 12169-20-9, Antimony tantalum oxide (SbTaO₄)
 12177-86-5, Calcium manganese oxide (CaMnO₃) 12187-14-3, Cadmium niobium
 oxide (Cd₂Nb₂O₇) 12201-66-0, Niobium zinc oxide (Nb₂ZnO₆) 12209-35-7,
 Manganese tin oxide (MnSnO₃) 12209-43-7, Manganese tin oxide (Mn₂SnO₄)
 12232-83-6, Bismuth chromium oxide (BiCrO₃) 12251-86-4, Aluminum
 tantalum oxide (AlTaO₄) 12258-25-2, Aluminum niobium oxide (AlNbO₄)
 12272-28-5, Bismuth niobium oxide (BiNbO₄) 12272-29-6, Bismuth tantalum
 oxide (BiTaO₄) 12274-06-5, Manganese zinc oxide (MnZnO₃) 12292-47-6,
 Chromium indium oxide (CrInO₃) 12311-81-8, Antimony vanadium oxide
 (SbVO₄) 12337-20-1, Lead titanium oxide (PbTiO₃) 12340-07-7, Lead
 tungsten oxide (PbWO₃) 12362-92-4, Niobium tin oxide (Nb₂SnO₆)
 12362-93-5, Niobium tin oxide (Nb₂Sn₂O₇) 12363-22-3, Tantalum tin oxide
 (Ta₂Sn₂O₇) 12378-52-8, Gallium tantalum oxide (GaTaO₄) 12379-00-9,
 Indium niobium oxide (InNbO₄) 12421-98-6, Calcium tantalum oxide
 (Ca₂Ta₂O₇) 12438-49-2, Magnesium tantalum oxide (Mg₂Ta₂O₇) 12438-60-7,
 Lead manganese oxide (PbMnO₃) 12440-09-4, Strontium tantalum oxide
 (Sr₂Ta₂O₇) 12501-29-0, Tellurium tin oxide (Te₃SnO₈) 12588-16-8,
 Aluminum chromium oxide (AlCrO₃) 12600-76-9, Tin zirconium oxide
 (SnZrO₃) 13074-68-5, Indium cyanide In(CN)₃ 13092-66-5 13138-45-9,
 Nickel nitrate 13450-99-2 13451-01-9 13451-02-0, Strontium sulfite
 13451-05-3, Strontium tungsten oxide (SrWO₄) 13453-58-2 13453-65-1

13464-82-9 13466-24-5 13468-91-2, Lead carbonate (PB(HCO₃)₂)
 13470-04-7, Strontium molybdate SrMoO₄ 13473-90-0, Aluminum nitrate
 13477-23-1, Cadmium sulfite CdSO₃ 13478-08-5 13478-50-7 13494-90-1,
 Gallium nitrate 13494-91-2, Gallium sulfate Ga₂(SO₄)₃ 13530-50-2
 13530-54-6 13530-56-8, Aluminum vanadium oxide (AlVO₄) 13530-65-9,
 Zinc chromate 13566-06-8, Vanadium sulfate VSO₄ 13568-71-3, Manganese
 sulfite 13573-11-0, Magnesium tungsten oxide (MgWO₄) 13573-13-2,
 Magnesium vanadium oxide (MgV₂O₆) 13587-24-1 13595-85-2, Bismuth
 molybdenum oxide (Bi₂Mo₃O₁₂) 13595-86-3, Bismuth tungsten oxide (Bi₂WO₆)
 13595-87-4, Bismuth tungsten oxide (Bi₂W₃O₁₂) 13596-21-9 13597-44-9,
 Zinc sulfite 13597-46-1 13597-54-1 13597-56-3, Tungsten zinc oxide
 (WZnO₄) 13597-58-5, Strontium vanadium oxide (SrV₂O₆) 13598-37-3
 13654-05-2 13689-92-4 13709-68-7 13718-59-7 13767-03-8, Magnesium
 molybdate MgMoO₄ 13767-32-3, Zinc molybdate ZnMoO₄ 13770-61-1
 13773-83-6 13774-25-9 13780-03-5 13780-18-2 13814-56-7
 13814-58-9 13814-59-0 13814-62-5 13819-17-5 13826-65-8
 13826-70-5, Tin nitrate Sn(NO₃)₄ 13845-15-3 13845-35-7 13847-12-6
 13860-02-1 13912-55-5 13972-68-4, Cadmium molybdenum oxide (CdMoO₄)
 13977-75-8 14013-02-6, Copper sulfite CuSO₃ 14013-86-6, Ferrous
 nitrate 14019-91-1 14047-62-2, Aluminum nitrite Al(NO₂)₃ 14059-33-7,
 Bismuth vanadium oxide (BiVO₄) 14067-62-0 14312-01-7 14332-25-3
 14332-34-4 14332-39-9 14332-59-3 14332-60-6 14355-35-2
 14373-77-4

RL: DEV (Device component use); USES (Uses)
 (anode active material for lithium-ion **batteries**)

IT 14455-29-9 14553-36-7, Tin tungsten oxide (SnWO₄) 14590-19-3
 14590-34-2 14590-38-6 14684-12-9 14696-77-6 14986-91-5
 15060-62-5 15060-64-7 15070-34-5, Magnesium nitrite 15123-69-0
 15123-80-5, Aluminum molybdate Al₂(MoO₄)₃ 15123-82-7, Aluminum tungsten
 oxide (Al₂W₃O₁₂) 15123-95-2 15191-99-8 15192-76-4 15320-45-3,
 Gallium vanadium oxide (GaVO₄) 15457-98-4 15469-59-7, Vanadium zinc
 oxide (V₂ZnO₆) 15514-01-9, Indium molybdenum oxide (In₂Mo₃O₁₂)
 15571-83-2, Indium tungsten oxide (In₂W₃O₁₂) 15593-61-0 15593-64-3
 15593-67-6 15600-69-8 15600-84-7 15702-34-8 15702-36-0
 15730-53-7 15845-52-0 15852-05-8 15852-08-1 15852-09-2
 15852-10-5 15852-13-8 15852-14-9 15852-18-3 15852-19-4
 15852-20-7 15852-21-8 15857-43-9 16056-72-7, Cadmium vanadium oxide
 (CdV₂O₆) 16180-04-4 16508-95-5, Bismuth carbonate 16714-74-2, Tin
 vanadium oxide (SnV₂O₆) 16726-63-9 16834-09-6 16890-98-5
 16905-09-2, Antimony manganese oxide (Sb₂MnO₄) 17153-86-5 17695-54-4
 17740-80-6 18141-06-5 18488-89-6 18496-31-6 18496-38-3
 18515-86-1 18526-81-3 18659-67-1 18725-92-3 18807-10-8
 18808-44-1 18864-85-2 18864-86-3 19028-20-7 19307-28-9, Tin
 sulfate Sn(SO₄)₂ 19853-03-3 20003-91-2, Gallium tungsten oxide
 (Ga₂W₃O₁₂) 20021-44-7 20328-96-5, Antimony nitrate 20403-34-3
 20943-22-0 20960-64-9 20960-79-6 22400-99-3, Manganese cyanide
 Mn(CN)₂ 22620-90-2 22755-27-7 23276-62-2 23377-49-3 23484-38-0,
 Indium vanadium oxide (InVO₄) 23665-02-3 24283-38-3, Tin tungsten
 oxide (SnW₂O₈) 24468-27-7 24468-29-9 24738-38-3 25105-31-1
 25268-69-3 25327-03-1 25599-25-1 31754-55-9 31967-38-1
 32702-66-2, Cobalt sulfite 34045-16-4, Chromium oxide silicate
 (Cr₂O₄(SiO₄)) 35387-42-9 35600-19-2, Antimony niobium oxide (SbNbO₄)
 35667-77-7, Tin cyanide Sn(CN)₂ 37205-75-7, Antimony titanium oxide
 (Sb₃Ti₂O₁₀) 37322-77-3, Indium manganese oxide (In₂MnO₄) 37368-61-9,
 Bismuth titanium oxide (Bi₂TiO₅) 38150-63-9 38150-64-0 39422-66-7,
 Magnesium manganese oxide (MgMnO₃) 39491-81-1 39712-38-4 40549-31-3,
 Aluminum sulfite Al₂(SO₃)₃ 42133-30-2 43384-63-0, Bismuth thiocyanate
 43384-99-2, Gallium thiocyanate 43636-19-7 44120-46-9 44121-71-3
 44122-15-8 45189-55-7 50787-80-9 50787-82-1 50787-84-3

50820-24-1, Ferrous sulfite 51306-12-8 51370-43-5,
 Silanetetracarbonitrile 51379-94-3 52014-18-3, Antimony manganese
 oxide (Sb₂MnO₆) 52014-36-5, Tin titanate SnTiO₄ 52236-42-7
 52435-34-4 52435-47-9 52478-60-1 53237-26-6, Antimony molybdenum
 oxide (Sb₂Mo₃O₁₂) 53411-67-9 53851-21-1, Aluminum tungsten oxide
 (AlWO₄) 54250-24-7, Tantalum zinc oxide (Ta₂Zn₂O₇) 54590-02-2, Barium
 dicyanate 54828-73-8, Gallium molybdenum oxide (Ga₂Mo₃O₁₂) 55135-61-0
 55145-88-5 55306-22-4, Chromium cyanide (Cr(CN)₃) 55927-25-8
 56451-24-2, Indium vanadium oxide (In₂VO₅) 56627-48-6, Tin tungsten
 oxide (Sn₂W₃O₈) 57538-97-3, Molybdenum cyanide (Mo(CN)₃) 59178-46-0
 60459-04-3, Indium carbonate 60459-05-4 60492-87-7, Strontium titanium
 oxide (SrTiO₄) 60763-29-3 60994-15-2 60994-16-3 61179-70-2,
 Bismuth manganese oxide (Bi₂MnO₄) 61737-93-7 62196-27-4 64789-76-0
 64896-84-0, Germanium thiocyanate 66903-62-6 66903-65-9 66904-06-1
 66906-87-4 67615-66-1 67615-67-2 67627-35-4 70692-95-4, Aluminum
 zirconium oxide (Al₂Zr₃O₉) 71070-32-1 71449-76-8 71456-91-2,
 Titanium cyanide Ti(CN)₃ 71520-17-7 71567-97-0 71843-93-1
 71896-27-0, Bismuth sulfite 72296-38-9, Molybdenum tin oxide (MoSnO₄)
 74421-56-0 77835-83-7 85450-13-1 86494-88-4 86893-88-1
 87993-97-3, Aluminum cyanide Al(CN)₃ 88878-19-7 89161-76-2
 91648-98-5 91785-92-1 91864-03-8 93805-27-7 94238-22-9
 95925-37-4 97187-09-2 97631-71-5 97994-52-0, Germanium cyanide
 99996-23-3 99996-26-6 100434-82-0 100436-77-9 100737-00-6
 100737-27-7 100737-52-8 101059-22-7 105564-68-9 107630-45-5
 107630-54-6 108064-26-2 111233-81-9 115010-02-1 115444-60-5
 118131-59-2 118150-53-1 118832-97-6 118833-31-1 121526-85-0,
 Bismuthinetricarbonitrile 121814-63-9 121835-89-0, Vanadium oxide
 silicate (VO_{1.5}(SiO₄)_{0.5}) 127324-46-3 128783-39-1 130263-24-0
 130263-26-2 141982-08-3 148523-56-2, Indium zirconium oxide
 (In_{0.8}Zr_{1.2}O_{3.6}) 149690-55-1 153584-46-4, Bismuth vanadium oxide
 (Bi₂VO₅) 154662-00-7, Calcium vanadium oxide (Ca_{0.5}VO₃) 157170-26-8
 162257-57-0, Indium molybdenum oxide (InMo₄O₆) 163119-07-1
 173979-77-6, Magnesium tungsten oxide (MgWO₃) 182288-58-0 190017-27-7,
 Gallium cyanide Ga(CN)₃ 201029-73-4 202004-37-3 202004-38-4
 202004-39-5 206182-17-4 210893-05-3 210893-06-4 210893-07-5
 210893-08-6 210893-09-7 210893-10-0 210893-11-1, Manganese tin
 nitrate (Mn_{0.22}Sn_{0.78}(NO₃)₂) 210893-12-2 210893-13-3, Iron tin nitrate
 (Fe_{0.12}Sn_{0.88}(NO₃)₂) 210893-14-4, Cobalt tin nitrate
 (Co_{0.18}Sn_{0.82}(NO₃)₂) 210893-15-5, Copper tin nitrate
 (Cu_{0.18}Sn_{0.82}(NO₃)₂) 210893-16-6, Tin titanium nitrate
 (Sn_{0.82}Ti_{0.12}(NO₃)₂)

RL: DEV (Device component use); USES (Uses)

(anode active material for lithium-ion batteries)

IT 210893-17-7, Chromium tin nitrate (Cr_{0.12}Sn_{0.82}(NO₃)₂) 210893-18-8, Tin
 zinc nitrate (Sn_{0.88}Zn_{0.12}(NO₃)₂) 210893-19-9, Tin vanadium nitrate
 (Sn_{0.82}V_{0.12}(NO₃)₂) 210893-22-4, Lead manganese nitrate
 (Pb_{0.78}Mn_{0.22}(NO₃)₂) 210893-23-5, Iron lead nitrate (Fe_{0.12}Pb_{0.88}(NO₃)₂)
 210893-24-6, Cobalt lead nitrate (Co_{0.18}Pb_{0.82}(NO₃)₂) 210893-25-7,
 Copper lead nitrate (Cu_{0.18}Pb_{0.82}(NO₃)₂) 210893-26-8, Lead titanium
 nitrate (Pb_{0.82}Ti_{0.12}(NO₃)₂) 210893-27-9, Lead zinc nitrate
 (Pb_{0.88}Zn_{0.12}(NO₃)₂) 210893-28-0, Chromium lead nitrate
 (Cr_{0.12}Pb_{0.82}(NO₃)₂) 210893-29-1, Lead tungsten nitrate
 (Pb_{0.82}W_{0.09}(NO₃)₂) 210893-30-4, Indium iron nitrate
 (In_{0.88}Fe_{0.18}(NO₃)₃) 210893-31-5, Cobalt indium nitrate
 (Co_{0.27}In_{0.82}(NO₃)₃) 210893-32-6, Copper indium nitrate
 (Cu_{0.27}In_{0.82}(NO₃)₃) 210893-33-7, Bismuth titanium nitrate
 (Bi_{0.82}Ti_{0.27}(NO₃)₃) 210893-34-8, Bismuth zinc nitrate
 (Bi_{0.88}Zn_{0.27}(NO₃)₃) 210893-36-0 **210893-37-1**
210893-38-2 210893-41-7 210893-44-0 210893-45-1

210893-46-2 210893-47-3 210893-48-4 210893-50-8 210893-51-9
 210893-52-0 210893-54-2 210893-55-3 210893-56-4 210893-57-5
 210893-58-6 210893-59-7 210893-60-0 210893-61-1 210893-62-2
 210893-63-3 210893-64-4, Chromium tin carbonate ($\text{Cr}_0.2\text{Sn}_0.7(\text{CO}_3)$)
 210893-65-5, Tin titanium carbonate ($\text{Sn}_0.7\text{Ti}_0.2(\text{CO}_3)$) 210893-66-6
 210893-67-7 210893-68-8 210893-69-9 210893-70-2 210893-71-3
 210893-72-4 210893-73-5 210893-74-6 210893-75-7, Lead titanium
 carbonate ($\text{Pb}_0.7\text{Ti}_0.2(\text{CO}_3)$) 210893-76-8 210893-77-9, Chromium lead
 carbonate ($\text{Cr}_0.2\text{Pb}_0.7(\text{CO}_3)$) 210893-78-0 210893-79-1, Indium iron
 carbonate ($\text{In}_1.6\text{Fe}_0.6(\text{CO}_3)_3$) 210893-80-4, Copper indium carbonate
 ($\text{Cu}_0.6\text{In}_1.6(\text{CO}_3)_3$) 210893-81-5, Cobalt indium carbonate
 ($\text{Co}_0.6\text{In}_1.6(\text{CO}_3)_3$) 210893-82-6, Bismuth titanium carbonate
 ($\text{Bi}_1.6\text{Ti}_0.4(\text{CO}_3)_3$) 210893-83-7, Indium zinc carbonate ($\text{In}_1.6\text{Zn}_0.6(\text{CO}_3)_3$)
 210893-84-8, Barium tin carbonate ($\text{Ba}_0.2\text{Sn}_0.8(\text{HCO}_3)_2$) 210893-85-9,
 Calcium tin carbonate ($\text{Ca}_0.2\text{Sn}_0.8(\text{HCO}_3)_2$) 210893-86-0, Strontium tin
 carbonate ($\text{Sr}_0.2\text{Sn}_0.8(\text{HCO}_3)_2$) 210893-87-1, Magnesium tin carbonate
 ($\text{Mg}_0.2\text{Sn}_0.8(\text{HCO}_3)_2$) 210893-88-2, Manganese tin carbonate
 ($\text{Mn}_0.2\text{Sn}_0.8(\text{HCO}_3)_2$) 210893-89-3, Iron tin carbonate ($\text{Fe}_0.2\text{Sn}_0.8(\text{HCO}_3)_2$)
 210893-90-6, Cobalt tin carbonate ($\text{Co}_0.2\text{Sn}_0.8(\text{HCO}_3)_2$) 210893-91-7,
 Copper tin carbonate ($\text{Cu}_0.2\text{Sn}_0.8(\text{HCO}_3)_2$) 210893-92-8, Tin titanium
 carbonate ($\text{Sn}_0.7\text{Ti}_0.2(\text{HCO}_3)_2$) 210893-93-9, Tin zinc carbonate
 ($\text{Sn}_0.8\text{Zn}_0.2(\text{HCO}_3)_2$) 210893-94-0, Chromium tin carbonate
 ($\text{Cr}_0.2\text{Sn}_0.7(\text{HCO}_3)_2$) 210893-95-1, Molybdenum tin carbonate
 ($\text{Mo}_0.2\text{Sn}_0.8(\text{HCO}_3)_2$) 210893-96-2, Barium lead carbonate
 ($\text{Ba}_0.2\text{Pb}_0.8(\text{HCO}_3)_2$) 210893-97-3, Calcium lead carbonate
 ($\text{Ca}_0.2\text{Pb}_0.8(\text{HCO}_3)_2$) 210893-98-4, Lead strontium carbonate
 ($\text{Pb}_0.8\text{Sr}_0.2(\text{HCO}_3)_2$) 210893-99-5, Lead magnesium carbonate
 ($\text{Pb}_0.8\text{Mg}_0.2(\text{HCO}_3)_2$) 210894-00-1, Lead manganese carbonate
 ($\text{Pb}_0.8\text{Mn}_0.2(\text{HCO}_3)_2$) 210894-01-2, Iron lead carbonate ($\text{Fe}_0.2\text{Pb}_0.8(\text{HCO}_3)_2$)
 210894-02-3, Cobalt lead carbonate ($\text{Co}_0.2\text{Pb}_0.8(\text{HCO}_3)_2$) 210894-03-4,
 Copper lead carbonate ($\text{Cu}_0.2\text{Pb}_0.8(\text{HCO}_3)_2$) 210894-04-5, Lead titanium
 carbonate ($\text{Pb}_0.7\text{Ti}_0.2(\text{HCO}_3)_2$) 210894-05-6, Lead zinc carbonate
 ($\text{Pb}_0.8\text{Zn}_0.2(\text{HCO}_3)_2$) 210894-06-7, Chromium lead carbonate
 ($\text{Cr}_0.2\text{Pb}_0.7(\text{HCO}_3)_2$) 210894-07-8, Lead molybdenum carbonate
 ($\text{Pb}_0.8\text{Mo}_0.2(\text{HCO}_3)_2$) 210894-08-9, Indium iron carbonate
 ($\text{In}_0.8\text{Fe}_0.3(\text{HCO}_3)_3$) 210894-09-0, Cobalt indium carbonate
 ($\text{Co}_0.3\text{In}_0.8(\text{HCO}_3)_3$) 210894-10-3, Copper indium carbonate
 ($\text{Cu}_0.3\text{In}_0.8(\text{HCO}_3)_3$) 210894-11-4, Bismuth titanium carbonate
 ($\text{Bi}_0.8\text{Ti}_0.2(\text{HCO}_3)_3$) 210894-12-5, Bismuth zinc carbonate
 ($\text{Bi}_0.8\text{Zn}_0.3(\text{HCO}_3)_3$) 210894-15-8 210894-16-9 210894-17-0
 210894-18-1 210894-19-2 210894-20-5 210894-21-6 210894-22-7
 210894-23-8 210894-24-9 210894-25-0 210894-26-1 210894-27-2
 210894-29-4 210894-30-7 210894-31-8 210894-32-9 210894-33-0
 210894-34-1 210894-36-3 210894-37-4, Barium tin borate
 ($\text{Ba}_0.1\text{Sn}_0.9(\text{HBO}_3)$) 210894-38-5, Calcium tin borate ($\text{Ca}_0.1\text{Sn}_0.9(\text{HBO}_3)$)
 210894-39-6, Strontium tin borate ($\text{Sr}_0.1\text{Sn}_0.9(\text{HBO}_3)$) 210894-40-9,
 Magnesium tin borate ($\text{Mg}_0.1\text{Sn}_0.9(\text{HBO}_3)$) 210894-41-0, Tin zinc borate
 ($\text{Sn}_0.9\text{Zn}_0.1(\text{HBO}_3)$) 210894-42-1, Copper tin borate ($\text{Cu}_0.1\text{Sn}_0.9(\text{HBO}_3)$)
 210894-43-2, Cobalt tin borate ($\text{Co}_0.1\text{Sn}_0.9(\text{HBO}_3)$) 210894-44-3, Iron tin
 borate ($\text{Fe}_0.1\text{Sn}_0.9(\text{HBO}_3)$) 210894-45-4, Nickel tin borate
 ($\text{Ni}_0.1\text{Sn}_0.9(\text{HBO}_3)$) 210894-46-5, Tin titanium borate ($\text{Sn}_0.7\text{Ti}_0.2(\text{HBO}_3)$)
 210894-47-6, Chromium tin borate ($\text{Cr}_0.1\text{Sn}_0.7(\text{HBO}_3)$) 210894-48-7, Tin
 vanadium borate ($\text{Sn}_0.9\text{V}_0.1(\text{HBO}_3)$) 210894-49-8, Molybdenum tin borate
 ($\text{Mo}_0.1\text{Sn}_0.9(\text{HBO}_3)$) 210894-50-1, Tin tungsten borate ($\text{Sn}_0.8\text{W}_0.1(\text{HBO}_3)$)
 210894-51-2, Indium manganese borate ($\text{In}_1.6\text{Mn}_0.6(\text{HBO}_3)_3$) 210894-52-3,
 Indium nickel borate ($\text{In}_1.6\text{Ni}_0.6(\text{HBO}_3)_3$) 210894-53-4, Cobalt indium
 borate ($\text{Co}_0.6\text{In}_1.6(\text{HBO}_3)_3$) 210894-54-5, Bismuth manganese borate
 ($\text{Bi}_1.6\text{Mn}_0.6(\text{HBO}_3)_3$) 210894-55-6, Bismuth nickel borate
 ($\text{Bi}_1.6\text{Ni}_0.6(\text{HBO}_3)_3$) 210894-56-7, Bismuth cobalt borate

($\text{Bi}_{1.6}\text{Co}_{0.6}(\text{HBO}_3)_3$) 210894-57-8, Barium lead borate ($\text{Ba}_{0.1}\text{Pb}_{0.9}(\text{HBO}_3)$)
 210894-58-9, Calcium lead borate ($\text{Ca}_{0.1}\text{Pb}_{0.9}(\text{HBO}_3)$) 210894-59-0, Lead
 strontium borate ($\text{Pb}_{0.9}\text{Sr}_{0.1}(\text{HBO}_3)$) 210894-60-3, Lead magnesium borate
 ($\text{Pb}_{0.9}\text{Mg}_{0.1}(\text{HBO}_3)$) 210894-62-5, Lead zinc borate ($\text{Pb}_{0.9}\text{Zn}_{0.1}(\text{HBO}_3)$)
 210894-63-6, Copper lead borate ($\text{Cu}_{0.1}\text{Pb}_{0.9}(\text{HBO}_3)$) 210894-64-7, Cobalt
 lead borate ($\text{Co}_{0.1}\text{Pb}_{0.9}(\text{HBO}_3)$) 210894-65-8, Iron lead borate
 ($\text{Fe}_{0.1}\text{Pb}_{0.9}(\text{HBO}_3)$) 210894-66-9, Lead nickel borate ($\text{Pb}_{0.9}\text{Ni}_{0.1}(\text{HBO}_3)$)
 210894-67-0, Lead titanium borate ($\text{Pb}_{0.7}\text{Ti}_{0.2}(\text{HBO}_3)$) 210894-68-1,
 Chromium lead borate ($\text{Cr}_{0.1}\text{Pb}_{0.7}(\text{HBO}_3)$) 210894-69-2, Lead vanadium
 borate ($\text{Pb}_{0.9}\text{V}_{0.1}(\text{HBO}_3)$) 210894-70-5, Lead molybdenum borate
 ($\text{Pb}_{0.9}\text{Mo}_{0.1}(\text{HBO}_3)$) 210894-71-6, Lead tungsten borate ($\text{Pb}_{0.8}\text{W}_{0.1}(\text{HBO}_3)$)
 210894-72-7 210894-73-8 210894-74-9 210894-75-0 210894-76-1
 210894-77-2 210894-78-3 210894-79-4 210894-80-7 210894-81-8
 210894-82-9 210894-83-0 210894-84-1 210894-85-2 210894-92-1
 210894-96-5 210895-00-4 210895-01-5 210895-02-6 210895-03-7
 210895-04-8 210895-05-9 210895-06-0 210895-07-1 210895-08-2
 210895-09-3 210895-11-7 210895-14-0 210895-15-1 210895-16-2
 210895-17-3 210895-18-4 210895-19-5 210895-20-8 210895-21-9
 210895-22-0 210895-23-1 210895-24-2 210895-25-3 210895-26-4
 210895-27-5 210895-29-7 210895-32-2 210895-44-6 210895-45-7
 210895-48-0 210895-58-2 210895-59-3 210895-60-6 210895-61-7
 210895-62-8 210895-63-9 210895-64-0 210895-65-1 210895-66-2
 210895-67-3 210895-68-4 210895-69-5 210895-70-8 210895-71-9
 210895-72-0 210895-73-1 210895-74-2 210895-75-3 210895-76-4
 210895-77-5 210895-78-6 210895-79-7 210895-80-0 210895-81-1
 210895-82-2 210895-84-4 210895-85-5 210895-86-6 210895-87-7
 210895-88-8 210895-89-9 210895-90-2 210895-91-3 210895-92-4
 210895-93-5 210895-94-6 210895-95-7 210895-96-8 210895-97-9
 210895-98-0 210895-99-1 210896-00-7 210896-01-8 210896-02-9
 210896-03-0 210896-04-1 210896-05-2 210896-06-3 210896-07-4
 210896-08-5 210896-09-6 210896-11-0

RL: DEV (Device component use); USES (Uses)

(anode active material for lithium-ion batteries)

IT 210896-13-2 210896-15-4 210896-17-6 210896-19-8 210896-21-2
 210896-24-5 210896-29-0 210896-41-6 210896-44-9 210896-46-1
 210896-48-3 210896-50-7 210896-52-9 210896-54-1 210896-56-3
 210896-59-6 210896-61-0 210896-62-1 210896-63-2 210896-65-4
 210896-67-6 210896-69-8 210896-74-5 210896-76-7 210896-78-9
 210896-80-3 210896-82-5 210896-84-7 210896-86-9 210896-87-0
 210896-88-1 210896-89-2 210896-90-5 210896-91-6 210896-92-7
 210896-93-8 210896-94-9 210896-95-0 210896-96-1 210896-97-2
 210896-98-3 210896-99-4 210897-00-0 210897-01-1 210897-03-3
 210897-06-6 210897-08-8 210897-10-2 210897-12-4 210897-15-7
 210897-17-9 210897-18-0 210897-19-1 210897-20-4 210897-21-5
 210897-22-6 210897-23-7 210897-24-8 210897-26-0 210897-27-1
 210897-29-3 210897-31-7 210897-34-0 210897-37-3 210897-39-5
 210897-43-1 210897-47-5 210897-51-1 210897-55-5 210897-58-8
 210897-61-3 210897-68-0 210897-79-3 210897-87-3 210897-90-8
 210897-94-2 210897-99-7 210898-22-9 210898-39-8, Magnesium tin
 sulfate ($\text{Mg}_{0.1}\text{Sn}_{0.9}(\text{SO}_4)$) 210898-43-4, Strontium tin sulfate
 ($\text{Sr}_{0.1}\text{Sn}_{0.9}(\text{SO}_4)$) 210898-47-8, Calcium tin sulfate ($\text{Ca}_{0.1}\text{Sn}_{0.9}(\text{SO}_4)$)
 210898-50-3, Tin zinc sulfate ($\text{Sn}_{0.9}\text{Zn}_{0.1}(\text{SO}_4)$) 210898-52-5, Nickel tin
 sulfate ($\text{Ni}_{0.1}\text{Sn}_{0.9}(\text{SO}_4)$) 210898-53-6, Iron tin sulfate
 ($\text{Fe}_{0.1}\text{Sn}_{0.9}(\text{SO}_4)$) 210898-54-7, Cobalt tin sulfate ($\text{Co}_{0.1}\text{Sn}_{0.9}(\text{SO}_4)$)
 210898-55-8, Manganese tin sulfate ($\text{Mn}_{0.1}\text{Sn}_{0.9}(\text{SO}_4)$) 210898-56-9, Copper
 tin sulfate ($\text{Cu}_{0.1}\text{Sn}_{0.9}(\text{SO}_4)$) 210898-57-0, Molybdenum tin sulfate
 ($\text{Mo}_{0.1}\text{Sn}_{0.9}(\text{SO}_4)$) 210898-58-1, Tin vanadium sulfate ($\text{Sn}_{0.9}\text{V}_{0.1}(\text{SO}_4)$)
 210898-59-2, Tin tungsten sulfate ($\text{Sn}_{0.8}\text{W}_{0.1}(\text{SO}_4)$) 210898-60-5, Chromium
 tin sulfate ($\text{Cr}_{0.2}\text{Sn}_{0.7}(\text{SO}_4)$) 210898-62-7, Molybdenum tin sulfate

(Mo0.2Sn0.7(SO4)) 210898-64-9, Lead magnesium sulfate (Pb0.9Mg0.1(SO4))
 210898-68-3, Lead strontium sulfate (Pb0.9Sr0.1(SO4)) 210898-71-8,
 Calcium lead sulfate (Ca0.1Pb0.9(SO4)) 210898-75-2, Lead zinc sulfate
 (Pb0.9Zn0.1(SO4)) 210898-77-4, Lead nickel sulfate (Pb0.9Ni0.1(SO4))
 210898-79-6, Iron lead sulfate (Fe0.1Pb0.9(SO4)) 210898-81-0, Cobalt
 lead sulfate (Co0.1Pb0.9(SO4)) 210898-82-1, Lead manganese sulfate
 (Pb0.9Mn0.1(SO4)) 210898-83-2, Copper lead sulfate (Cu0.1Pb0.9(SO4))
 210898-84-3, Lead molybdenum sulfate (Pb0.9Mo0.1(SO4)) 210898-85-4, Lead
 vanadium sulfate (Pb0.9V0.1(SO4)) 210898-86-5, Lead tungsten sulfate
 (Pb0.8W0.1(SO4)) 210898-87-6, Chromium lead sulfate (Cr0.2Pb0.7(SO4))
 210898-88-7, Lead molybdenum sulfate (Pb0.7Mo0.2(SO4)) 210898-89-8,
 Magnesium tin sulfate (Mg0.1Sn0.9(HSO4)2) 210898-90-1, Strontium tin
 sulfate (Sr0.1Sn0.9(HSO4)2) 210898-91-2, Calcium tin sulfate
 (Ca0.1Sn0.9(HSO4)2) 210898-92-3, Tin zinc sulfate (Sn0.9Zn0.1(HSO4)2)
 210898-93-4, Nickel tin sulfate (Ni0.1Sn0.9(HSO4)2) 210898-94-5, Iron
 tin sulfate (Fe0.1Sn0.9(HSO4)2) 210898-95-6, Cobalt tin sulfate
 (Co0.1Sn0.9(HSO4)2) 210898-96-7, Manganese tin sulfate
 (Mn0.1Sn0.9(HSO4)2) 210898-97-8, Copper tin sulfate (Cu0.1Sn0.9(HSO4)2)
 210898-98-9, Molybdenum tin sulfate (Mo0.1Sn0.9(HSO4)2) 210898-99-0, Tin
 vanadium sulfate (Sn0.9V0.1(HSO4)2) 210899-00-6, Tin tungsten sulfate
 (Sn0.8W0.1(HSO4)2) 210899-01-7, Chromium tin sulfate (Cr0.2Sn0.7(HSO4)2)
 210899-02-8, Molybdenum tin sulfate (Mo0.2Sn0.7(HSO4)2) 210899-03-9,
 Lead magnesium sulfate (Pb0.9Mg0.1(HSO4)2) 210899-04-0, Lead strontium
 sulfate (Pb0.9Sr0.1(HSO4)2) 210899-05-1, Calcium lead sulfate
 (Ca0.1Pb0.9(HSO4)2) 210899-06-2, Lead zinc sulfate (Pb0.9Zn0.1(HSO4)2)
 210899-07-3, Lead nickel sulfate (Pb0.9Ni0.1(HSO4)2) 210899-09-5, Iron
 lead sulfate (Fe0.1Pb0.9(HSO4)2) 210899-10-8, Cobalt lead sulfate
 (Co0.1Pb0.9(HSO4)2) 210899-11-9, Lead manganese sulfate
 (Pb0.9Mn0.1(HSO4)2) 210899-12-0, Copper lead sulfate (Cu0.1Pb0.9(HSO4)2)
 210899-13-1, Lead molybdenum sulfate (Pb0.9Mo0.1(HSO4)2) 210899-14-2,
 Lead vanadium sulfate (Pb0.9V0.1(HSO4)2) 210899-16-4, Lead tungsten
 sulfate (Pb0.8W0.1(HSO4)2) 210899-18-6, Chromium lead sulfate
 (Cr0.2Pb0.7(HSO4)2) 210899-20-0, Lead molybdenum sulfate
 (Pb0.7Mo0.2(HSO4)2) 210899-22-2, Indium magnesium sulfate
 (In1.6Mg0.6(SO4)3) 210899-23-3, Indium zinc sulfate (In1.6Zn0.6(SO4)3)
 210899-24-4, Indium nickel sulfate (In1.6Ni0.6(SO4)3) 210899-25-5,
 Bismuth cobalt sulfate (Bi1.6Co0.6(SO4)3) 210899-26-6, Bismuth iron
 sulfate (Bi1.6Fe0.6(SO4)3) 210899-28-8, Bismuth manganese sulfate
 (Bi1.6Mn0.6(SO4)3) 210899-29-9 210899-30-2 210899-31-3 210899-32-4
 210899-33-5, Cobalt indium sulfate (Co0.3In0.8(HSO4)3) 210899-34-6,
 Indium iron sulfate (In0.8Fe0.3(HSO4)3) 210899-35-7, Indium manganese
 sulfate (In0.8Mn0.3(HSO4)3) 210899-36-8, Bismuth magnesium sulfate
 (Bi0.8Mg0.3(HSO4)3) 210899-37-9, Bismuth zinc sulfate
 (Bi0.8Zn0.3(HSO4)3) 210899-38-0, Bismuth nickel sulfate
 (Bi0.8Ni0.3(HSO4)3) 210899-41-5, Tin sulfate (Sn(HSO4)0.2(SO4)0.9)
 210899-43-7, Lead sulfate (Pb(HSO4)0.2(SO4)0.9) 210899-45-9, Indium
 sulfate (In2(HSO4)0.2(SO4)2.9) 210899-47-1, Bismuth sulfate
 (Bi2(HSO4)0.2(SO4)2.9) 210899-52-8 210899-53-9 210899-56-2
 210899-74-4 210899-75-5 210899-76-6 210899-77-7 210899-81-3
 210899-87-9 210899-95-9 210899-97-1 210900-00-8 210900-02-0
 210900-03-1 210900-05-3 210900-07-5 210900-08-6 210900-09-7
 210900-10-0 210900-11-1 210900-12-2 210900-14-4 210900-24-6
 210900-29-1 210900-40-6 210900-49-5 210900-55-3 210900-61-1
 210900-68-8 210900-77-9 210900-94-0 210901-01-2 210901-08-9
 210901-16-9 210901-21-6 210901-28-3 210901-33-0 210901-36-3
 210901-39-6 210901-49-8 210901-59-0 210901-64-7 210901-68-1,
 Magnesium tin selenate (Mg0.1Sn0.9(SeO4)) 210901-72-7, Tin zinc selenate
 (Sn0.9Zn0.1(SeO4)) 210901-75-0, Nickel tin selenate (Ni0.1Sn0.9(SeO4))
 210901-78-3, Iron tin selenate (Fe0.1Sn0.9(SeO4)) 210901-82-9, Cobalt

tin selenate (Co0.1Sn0.9(SeO4)) 210901-85-2, Manganese tin selenate (Mn0.1Sn0.9(SeO4)) 210901-88-5, Copper tin selenate (Cu0.1Sn0.9(SeO4)) 210901-90-9, Molybdenum tin selenate (Mo0.1Sn0.9(SeO4)) 210901-92-1, Tin vanadium selenate (Sn0.9V0.1(SeO4)) 210901-94-3, Tin tungsten selenate (Sn0.8W0.1(SeO4)) 210901-98-7, Chromium tin selenate (Cr0.2Sn0.7(SeO4)) 210902-03-7, Calcium tin selenate (Ca0.1Sn0.9(SeO4)) 210902-05-9, Strontium tin selenate (Sr0.1Sn0.9(SeO4)) 210902-06-0, Barium tin selenate (Ba0.1Sn0.9(SeO4)) 210902-07-1, Lead magnesium selenate (Pb0.9Mg0.1(SeO4)) 210902-08-2, Lead zinc selenate (Pb0.9Zn0.1(SeO4)) 210902-09-3, Lead nickel selenate (Pb0.9Ni0.1(SeO4)) 210902-10-6, Iron lead selenate (Fe0.1Pb0.9(SeO4)) 210902-11-7, Cobalt lead selenate (Co0.1Pb0.9(SeO4)) 210902-12-8, Lead manganese selenate (Pb0.9Mn0.1(SeO4)) 210902-13-9, Copper lead selenate (Cu0.1Pb0.9(SeO4)) 210902-14-0, Lead molybdenum selenate (Pb0.9Mo0.1(SeO4)) 210902-15-1, Lead vanadium selenate (Pb0.9V0.1(SeO4)) 210902-16-2, Calcium lead selenate (Ca0.1Pb0.9(SeO4)) 210902-17-3, Lead strontium selenate (Pb0.9Sr0.1(SeO4)) 210902-18-4, Barium lead selenate (Ba0.1Pb0.9(SeO4)) 210902-19-5, Lead tungsten selenate (Pb0.8W0.1(SeO4)) 210902-20-8, Chromium lead selenate (Cr0.2Pb0.7(SeO4)) 210902-21-9, Magnesium tin selenate (Mg0.1Sn0.9(HSeO4)) 210902-22-0, Tin zinc selenate (Sn0.9Zn0.1(HSeO4)) 210902-23-1, Nickel tin selenate (Ni0.1Sn0.9(HSeO4)) 210902-24-2, Iron tin selenate (Fe0.1Sn0.9(HSeO4)) 210902-25-3, Cobalt tin selenate (Co0.1Sn0.9(HSeO4)) 210902-26-4, Manganese tin selenate (Mn0.1Sn0.9(HSeO4)) 210902-27-5, Copper tin selenate (Cu0.1Sn0.9(HSeO4)) 210902-28-6, Molybdenum tin selenate (Mo0.1Sn0.9(HSeO4)) 210902-29-7, Tin vanadium selenate (Sn0.9V0.1(HSeO4)) 210902-30-0, Calcium tin selenate (Ca0.1Sn0.9(HSeO4)) 210902-31-1, Strontium tin selenate (Sr0.1Sn0.9(HSeO4)) 210902-32-2, Barium tin selenate (Ba0.1Sn0.9(HSeO4)) 210902-33-3, Tin tungsten selenate (Sn0.8W0.1(HSeO4)) 210902-34-4, Chromium tin selenate (Cr0.2Sn0.7(HSeO4)) 210902-35-5, Lead magnesium selenate (Pb0.9Mg0.1(HSeO4))

RL: DEV (Device component use); USES (Uses)

(anode active material for lithium-ion **batteries**)

IT 210902-36-6, Lead zinc selenate (Pb0.9Zn0.1(HSeO4)) 210902-37-7, Lead nickel selenate (Pb0.9Ni0.1(HSeO4)) 210902-38-8, Iron lead selenate (Fe0.1Pb0.9(HSeO4)) 210902-39-9, Cobalt lead selenate (Co0.1Pb0.9(HSeO4)) 210902-40-2, Lead manganese selenate (Pb0.9Mn0.1(HSeO4)) 210902-41-3, Copper lead selenate (Cu0.1Pb0.9(HSeO4)) 210902-43-5, Lead molybdenum selenate (Pb0.9Mo0.1(HSeO4)) 210902-45-7, Lead vanadium selenate (Pb0.9V0.1(HSeO4)) 210902-47-9, Calcium lead selenate (Ca0.1Pb0.9(HSeO4)) 210902-49-1, Lead strontium selenate (Pb0.9Sr0.1(HSeO4)) 210902-50-4, Barium lead selenate (Ba0.1Pb0.9(HSeO4)) 210902-51-5, Lead tungsten selenate (Pb0.8W0.1(HSeO4)) 210902-52-6, Chromium lead selenate (Cr0.2Pb0.7(HSeO4)) 210902-53-7, Indium magnesium selenate (In1.6Mg0.6(SeO4)3) 210902-54-8, Indium zinc selenate (In1.6Zn0.6(SeO4)3) 210902-55-9, Indium nickel selenate (In1.6Ni0.6(SeO4)3) 210902-56-0, Bismuth cobalt selenate (Bi1.6Co0.6(SeO4)3) 210902-57-1, Bismuth iron selenate (Bi1.6Fe0.6(SeO4)3) 210902-58-2, Bismuth manganese selenate (Bi1.6Mn0.6(SeO4)3) 210902-59-3, Cobalt indium selenate (Co0.3In0.8(HSeO4)3) 210902-60-6, Indium iron selenate (In0.8Fe0.3(HSeO4)3) 210902-61-7, Indium manganese selenate (In0.8Mn0.3(HSeO4)3) 210902-62-8, Bismuth magnesium selenate (Bi0.8Mg0.3(HSeO4)3) 210902-63-9, Bismuth zinc selenate (Bi0.8Zn0.3(HSeO4)3) 210902-64-0, Bismuth nickel selenate (Bi0.8Ni0.3(HSeO4)3) 210902-65-1 210902-66-2 210902-68-4, Lead tellurium oxide (PbTe3O8) 210902-70-8 210902-72-0 210902-74-2

210902-75-3 210902-77-5 210902-78-6 210902-85-5 210902-86-6
 210902-87-7 210902-88-8 210902-92-4 210902-95-7 210902-97-9
 210902-98-0 210902-99-1 210903-00-7 210903-01-8 210903-02-9
 210903-03-0 210903-04-1 210903-05-2 210903-06-3 210903-07-4
 210903-08-5 210903-09-6 210903-10-9 210903-11-0 210903-13-2
 210903-15-4 210903-18-7 210903-26-7, Magnesium tin tellurate
 (Mg_{0.1}Sn_{0.9}(TeO₄)) 210903-28-9, Calcium tin tellurate (Ca_{0.1}Sn_{0.9}(TeO₄))
 210903-32-5, Strontium tin tellurate (Sr_{0.1}Sn_{0.9}(TeO₄)) 210903-36-9, Tin
 zinc tellurate (Sn_{0.9}Zn_{0.1}(TeO₄)) 210903-38-1, Nickel tin tellurate
 (Ni_{0.1}Sn_{0.9}(TeO₄)) 210903-41-6, Iron tin tellurate (Fe_{0.1}Sn_{0.9}(TeO₄))
 210903-44-9, Cobalt tin tellurate (Co_{0.1}Sn_{0.9}(TeO₄)) 210903-47-2,
 Manganese tin tellurate (Mn_{0.1}Sn_{0.9}(TeO₄)) 210903-50-7, Copper tin
 tellurate (Cu_{0.1}Sn_{0.9}(TeO₄)) 210903-53-0, Molybdenum tin tellurate
 (Mo_{0.1}Sn_{0.9}(TeO₄)) 210903-56-3, Tin vanadium tellurate (Sn_{0.9}V_{0.1}(TeO₄))
 210903-59-6, Tin tungsten tellurate (Sn_{0.8}W_{0.1}(TeO₄)) 210903-62-1,
 Chromium tin tellurate (Cr_{0.2}Sn_{0.7}(TeO₄)) 210903-65-4, Lead magnesium
 tellurate (Pb_{0.9}Mg_{0.1}(TeO₄)) 210903-68-7, Calcium lead tellurate
 (Ca_{0.1}Pb_{0.9}(TeO₄)) 210903-72-3, Lead strontium tellurate
 (Pb_{0.9}Sr_{0.1}(TeO₄)) 210903-76-7, Lead zinc tellurate (Pb_{0.9}Zn_{0.1}(TeO₄))
 210903-80-3, Lead nickel tellurate (Pb_{0.9}Ni_{0.1}(TeO₄)) 210903-83-6, Iron
 lead tellurate (Fe_{0.1}Pb_{0.9}(TeO₄)) 210903-86-9, Cobalt lead tellurate
 (Co_{0.1}Pb_{0.9}(TeO₄)) 210903-89-2, Lead manganese tellurate
 (Pb_{0.9}Mn_{0.1}(TeO₄)) 210903-93-8, Copper lead tellurate (Cu_{0.1}Pb_{0.9}(TeO₄))
 210903-97-2, Lead molybdenum tellurate (Pb_{0.9}Mo_{0.1}(TeO₄)) 210903-98-3,
 Lead vanadium tellurate (Pb_{0.9}V_{0.1}(TeO₄)) 210903-99-4, Lead tungsten
 tellurate (Pb_{0.9}W_{0.1}(TeO₄)) 210904-01-1 210904-02-2 210904-04-4
 210904-06-6 210904-09-9 210904-12-4 210904-15-7 210904-19-1
 210904-21-5 210904-23-7 210904-25-9 210904-27-1 210904-29-3
 210904-31-7 210904-33-9 210904-35-1 210904-37-3 210904-39-5
 210904-41-9 210904-43-1 210904-46-4 210904-50-0 210904-53-3
 210904-56-6 210904-60-2 210904-62-4 210904-65-7 210904-69-1
 210904-72-6 210904-76-0 210904-79-3, Chromium lead tellurate
 (Cr_{0.2}Pb_{0.7}(TeO₄)) 210904-81-7, Indium magnesium tellurate
 (In_{1.6}Mg_{0.6}(TeO₆)) 210904-83-9, Indium zinc tellurate (In_{1.6}Zn_{0.6}(TeO₆))
 210904-85-1, Indium iron tellurate (In_{1.6}Fe_{0.6}(TeO₆)) 210904-86-2,
 Bismuth magnesium tellurate (Bi_{1.6}Mg_{0.6}(TeO₆)) 210904-87-3, Bismuth zinc
 tellurate (Bi_{1.6}Zn_{0.6}(TeO₆)) 210904-88-4, Bismuth iron tellurate
 (Bi_{1.6}Fe_{0.6}(TeO₆)) 210904-89-5 210904-90-8 210904-92-0 210904-96-4
 210905-01-4 210905-03-6 210905-05-8 210905-07-0 210905-28-5
 210905-34-3 210905-51-4 210905-58-1 210905-78-5 210905-85-4
 210906-06-2 210906-18-6 210906-47-1 210906-54-0 210906-60-8
 210906-67-5 210906-73-3 210906-79-9 210906-86-8 210906-93-7
 210907-00-9 210907-06-5, Tin titanium phosphate (Sn_{0.7}Ti_{0.2}(HPO₄))
 210907-11-2 210907-15-6, Chromium tin phosphate (Cr_{0.2}Sn_{0.7}(HPO₄))
 210907-19-0 210907-23-6, Tin tungsten phosphate (Sn_{0.8}W_{0.1}(HPO₄))
 210907-27-0 210907-31-6 210907-34-9 210907-38-3 210907-41-8
 210907-43-0 210907-46-3 210907-50-9 210907-52-1 210907-54-3
 210907-56-5, Lead titanium phosphate (Pb_{0.7}Ti_{0.2}(HPO₄)) 210907-58-7,
 Chromium lead phosphate (Cr_{0.2}Pb_{0.7}(HPO₄)) 210907-60-1, Lead tungsten
 phosphate (Pb_{0.8}W_{0.1}(HPO₄)) 210907-62-3, Tin (diphosphate) phosphate
 (Sn₂(P₂O₇)_{0.9}(HPO₄)_{0.2}) 210907-64-5, Tin (diphosphate) phosphate
 (Sn₂(P₂O₇)_{0.8}(HPO₄)_{0.4}) 210907-66-7, Lead (diphosphate) phosphate
 (Pb₂(P₂O₇)_{0.9}(HPO₄)_{0.2}) 210907-68-9, Lead (diphosphate) phosphate
 (Pb₂(P₂O₇)_{0.8}(HPO₄)_{0.4}) 210907-70-3, Stannanetetracarbonitrile
 210907-74-7 210907-81-6 210907-86-1 210907-89-4 210907-92-9
 210907-95-2, Vanadium cyanide (V(CN)₂) 210907-98-5 210908-00-2
 210908-03-5 210908-07-9 210908-09-1 210908-11-5 210908-13-7
 210908-15-9 210908-17-1 210908-19-3, Niobium cyanide (Nb(CN)₃)
 210908-21-7 210908-24-0 210908-27-3, Tin zinc cyanide (SnZn(CN)₄)

210908-29-5 210908-34-2 210908-40-0 210908-43-3, Nickel tin cyanide
(NiSn(CN)4) 210908-47-7 210908-51-3 210908-54-6, Tin titanium
cyanide (SnTi(CN)5) 210908-58-0 210908-61-5, Lead nickel cyanide
(PbNi(CN)4) 210908-64-8 210908-67-1 210908-71-7, Lead zinc cyanide
(PbZn(CN)4) 210908-74-0 210908-76-2 210908-79-5 210908-83-1
210908-85-3, Lead titanium cyanide (PbTi(CN)5) 210908-87-5
210908-88-6, Copper indium cyanide (CuIn(CN)5) 210908-89-7 210908-90-0
210908-94-4, Indium magnesium cyanide (InMg(CN)5) 210908-96-6, Bismuth
copper cyanide (BiCu(CN)5) 210908-98-8 210909-01-6 210909-03-8,
Bismuth calcium cyanide (BiCa(CN)5) 210909-06-1, Bismuth magnesium
cyanide (BiMg(CN)5) 210909-08-3, Tungsten oxide silicate (W2O4(SiO4))
210909-10-7, Cadmium tungsten oxide (CdWO3) 210909-13-0, Indium tungsten
oxide (InW3O9) 210909-15-2, Antimony tungsten oxide (Sb2W3O12)
210909-17-4, Tungsten zinc oxide (WZnO3) 210909-19-6, Gallium tungsten
oxide (Ga2W3O9) 210909-20-9, Germanium tungsten oxide (GeW2O8)
210909-21-0, Germanium tungsten oxide (GeW2O6) 210909-27-6, Molybdenum
oxide silicate (Mo2O4(SiO4)) 210909-28-7, Germanium molybdenum oxide
(GeMoO4) 210909-29-8, Aluminum titanium oxide (AlTiO5) 210909-30-1,
Titanium oxide silicate (TiO4(SiO4)) 210909-31-2, Gallium titanium oxide
(GaTiO5) 210909-32-3, Germanium titanium oxide (GeTiO3) 210909-33-4,
Magnesium titanium oxide (MgTiO4) 210909-34-5, Calcium titanium oxide
(CaTiO4) 210909-36-7, Antimony zirconium oxide (Sb2Zr3O9) 210909-37-8,
Gallium zirconium oxide (Ga2Zr3O9) 210909-38-9, Germanium zirconium
oxide (GeZrO3) 210909-40-3, Tin vanadium oxide (SnVO3) 210909-41-4,
Lead vanadium oxide (PbVO3) 210909-45-8, Germanium vanadium oxide
(GeV2O6) 210909-50-5, Chromium lead oxide (CrPb3O6) 210909-51-6,
Bismuth chromium oxide (Bi2CrO6) 210909-53-8, Chromium indium oxide
(CrIn2O6)

RL: DEV (Device component use); USES (Uses)

(anode active material for lithium-ion **batteries**)

IT 210909-54-9, Antimony chromium oxide (Sb2Cr3O12) 210909-56-1, Chromium
gallium oxide (Cr2Ga3O8) 210909-58-3, Chromium germanium oxide (CrGeO4)
210909-59-4, Chromium magnesium oxide (Cr2MgO7) 210909-62-9, Calcium
chromium oxide (CaCr2O7) 210909-65-2, Chromium strontium oxide (Cr2SrO7)
210909-75-4, Germanium niobium oxide (GeNb2O6) 210909-76-5, Tantalum
oxide silicate (Ta2O(SiO3)2) 210909-77-6, Germanium tantalum oxide
(Ge2Ta2O7) 210909-78-7, Aluminum manganese oxide (Al2MnO6)
210909-80-1, Bismuth manganese oxide (Bi2MnO6) 210909-81-2, Indium
manganese oxide (In2MnO6)

RL: DEV (Device component use); USES (Uses)

(anode active material for lithium-ion **batteries**)

IT 130811-82-4P, Cobalt lithium manganese oxide (Co0.2LiMn1.8O4)
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP
(Preparation); USES (Uses)
(**battery** cathodes)

IT 12737-86-9, Tungstate

RL: DEV (Device component use); USES (Uses)

(metal and semimetal; anode active material for lithium-ion
batteries)

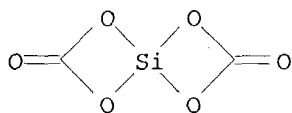
IT 210893-37-1 210893-38-2

RL: DEV (Device component use); USES (Uses)

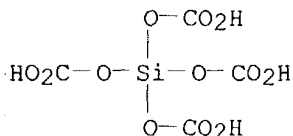
(anode active material for lithium-ion **batteries**)

RN 210893-37-1 HCAPLUS

CN 1,3,5,7-Tetraoxa-4-silaspiro[3.3]heptane-2,6-dione (9CI) (CA INDEX NAME)



RN 210893-38-2 HCAPLUS
 CN Carbonic acid, anhydride with silicic acid (H4SiO4) (4:1) (9CI) (CA INDEX NAME)



RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L60 ANSWER 17 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1998:220934 HCAPLUS

DN 128:246244

TI Lithium batteries and their manufacture

IN Ozawa, Akiya; Kato, Tadaya; Mase, Shunzo

PA Japan

SO Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10092470	A2	19980410	JP 1996-282830	19960917
PRAI	JP 1996-282830		19960917		

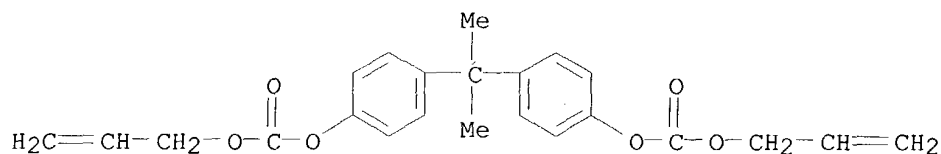
AB The batteries have a gelled electrolyte containing a Li containing electrolyte and an organic solvent for the salt between a coiled electrode stack. The batteries are manufactured by preparing a cathode and an anode on collector foils, winding the cathode and anode into a coil, soaking a solution containing an organic solvent and a gelling agent or its precursor in the coil, gelling the solution, and diffusing a Li containing **electrolyte** into the **gel**. The batteries may also be prepared by using a solution containing the solvent, the gelling agent or its precursor, and the electrolyte without the diffusion of electrolyte after the gelling. A separator containing part of the gelling agent or its precursor may be placed between the electrodes.

IC ICM H01M010-40
 ICS H01M002-16

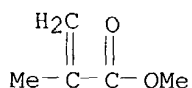
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

IT 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate 110-71-4, 1,2-Dimethoxyethane 9003-70-7, Divinylbenzene-styrene copolymer 9003-70-7D, Divinylbenzene-styrene copolymer, sulfonated, lithium salt 14283-07-9, Lithium fluoroborate 21324-40-3, Lithium hexafluorophosphate 154865-19-7 **205128-34-3**

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
 (secondary lithium batteries with gelled electrolytes and their manufacture)
 IT 205128-34-3
 RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
 (secondary lithium batteries with gelled electrolytes and their manufacture)
 RN 205128-34-3 HCAPLUS
 CN 2-Propenoic acid, 2-methyl-, methyl ester, polymer with
 (1-methylethylidene)di-4,1-phenylene bis(-2-propenyl carbonate) (9CI) (CA INDEX NAME)
 CM 1
 CRN 84000-75-9
 CMF C23 H24 O6



CM 2
 CRN 80-62-6
 CMF C5 H8 O2



L60 ANSWER 18 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 1997:155675 HCAPLUS
 DN 126:251784
 TI Lithium ionic conductivity in poly(ether **urethanes**) derived from poly(ethylene glycol) and lysine ethyl ester
 AU Ramanujachary, K. V.; Tong, X.; Lu, Y.; Kohn, J.; Greenblatt, M.
 CS Dep. Chem., Rutgers, State Univ. New Jersey, New Brunswick, NJ, 08903, USA
 SO Journal of Applied Polymer Science (1997), 63(11), 1449-1456
 CODEN: JAPNAB; ISSN: 0021-8995
 PB Wiley
 DT Journal
 LA English
 AB Poly(ether **urethanes**) obtained by the copolymer. of poly(ethylene glycol) (PEG) and lysine Et ester (LysOEt) are elastomeric materials that can be processed readily to form flexible, soft films. In view of these desirable physicomach. properties, the potential use of these new materials as solid polymer **electrolytes** was explored. Solid polymer **electrolytes** were prepared with copolymers containing PEG blocks of different lengths and with different concns. of lithium triflate (LiCF3SO3). Correlations between the length of the PEG block, the concentration

of lithium triflate in the formulation, and the observed Li⁺ ion conductivity were

investigated. Solid **electrolyte** formulations were characterized by differential scanning calorimetry for glass transition temps. (T_g), m.p.s. (T_m), and crystallinity. Ionic conductivity measurements were carried out

on thin films of the polymer **electrolytes** that had been cast on a microelectrode assembly using conventional a.c.-impedance spectroscopy. These polymer **electrolytes** showed inherently high ionic conductivity at room temperature. The optimum concentration of lithium triflate was about 25-30%

(weight/weight), resulting at room temperature in an ionic conductivity of about 10⁻⁵ S cm⁻¹.

For poly(PEG2000-LysOEt) containing 30% LiCF₃SO₃, the activation energy was ~1.1 eV. Block copolymers of PEG and lysine Et ester are promising candidates for the development of polymeric, solvent-free **electrolytes**.

CC: 37-5 (Plastics Manufacture and Processing)

ST polyoxyethylene **polyurethane** lithium complex; ionic cond polyethylene glycol **polyurethane**; lysine ethyl ester polyoxyethylene **polyurethane**

IT Crystallinity

(degree of; of polyoxyethylene-**polyurethane** lithium complexes derived from polyethylene glycol and lysine Et ester)

IT Ionic conductivity

(lithium ionic conductivity in polyoxyethylene-**polyurethanes** derived from polyethylene glycol and lysine Et ester)

IT Glass transition temperature

(of polyoxyethylene-**polyurethane** lithium complexes derived from polyethylene glycol and lysine Et ester)

IT **Polyurethanes**, properties

RL: PRP (Properties)

(polyoxyethylene-, lithium complexes; lithium ionic conductivity in polyoxyethylene-**polyurethanes** derived from polyethylene glycol and lysine Et ester)

IT 7439-93-2D, Lithium, complexes with polyoxyethylene-**polyurethanes**

, properties **145781-05-1D**, lithium complexes

RL: PRP (Properties)

(lithium ionic conductivity in polyoxyethylene-**polyurethanes** derived from polyethylene glycol and lysine Et ester)

IT **145781-05-1D**, lithium complexes

RL: PRP (Properties)

(lithium ionic conductivity in polyoxyethylene-**polyurethanes** derived from polyethylene glycol and lysine Et ester)

RN 145781-05-1 HCAPLUS

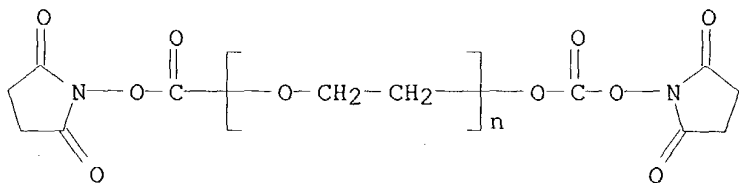
CN L-Lysine, ethyl ester, polymer with α-[[[(2,5-dioxo-1-pyrrolidinyl)oxy]carbonyl]-ω-[[[(2,5-dioxo-1-pyrrolidinyl)oxy]carbonyl]oxy]poly(oxy-1,2-ethanediyl) (9CI) (CA INDEX NAME)

CM 1

CRN 122375-06-8

CMF (C2 H4 O)_n C10 H8 N2 O9

CCI PMS

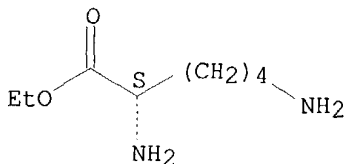


CM 2

CRN 4117-33-3

CMF C8 H18 N2 O2

Absolute stereochemistry.



L60 ANSWER 19 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1992:135528 HCAPLUS

DN 116:135528

TI Performance-oriented packaging standards; changes to classification, hazard communication, packaging and handling requirements based on UN standards and agency initiative

CS United States Dept. of Transportation, Washington, DC, 20590-0001, USA

SO Federal Register (1990), 55(246), 52402-729, 21 Dec 1990

CODEN: FEREC; ISSN: 0097-6326

DT Journal

LA English

AB The hazardous materials regulations under the Federal Hazardous Materials Transportation Act are revised based on the United Nations recommendations on the transport of dangerous goods. The regulations cover the classification of materials, packaging requirements, and package marking, labeling, and shipping documentation, as well as transportation modes and handling, and incident reporting. Performance-oriented stds. are adopted for packaging for bulk and nonbulk transportation, and SI units of measurement generally replace US customary units. Hazardous material descriptions and proper shipping names are tabulated together with hazard class, identification nos., packing group, label required, special provisions, packaging authorizations, quantity limitations, and vessel stowage requirements.

CC 59-6 (Air Pollution and Industrial Hygiene)

IT Adhesives

Alcoholic beverages

Ammunition

Antifreeze substances

Bactericides, Disinfectants, and Antiseptics

Batteries, primary

Blasting gelatin

Bombs (explosives)

Carbon paper
Cartridges
Castor bean
Coating materials
Corrosive substances
Cotton
Creosote
Detonators
Dyes
Dynamite
Electric fuses
Exothermic materials
Explosives
Flavoring materials
Flue dust
Fuel cells
Fuel oil
Fuels, diesel
Fuels, jet aircraft
Fusel oil
Fuses, explosives
Gas oils
Hay
Herbicides
Igniters and Lighters
Insecticides
Lacrimators
Magnetic substances
Matches
Oxidizing agents
Perfumes
Pesticides
Petroleum products
Pharmaceuticals
Photoelectric devices
Poisons
Primers, explosive
Projectiles
Pyrophoric substances
Pyrotechnic compositions
Radioactive substances
Refrigerating apparatus
Rockets
Shale oils
Solvent naphtha
Sprays
Straw
Textiles
Thermoelectric devices
Torpedoes (weapons)
Turpentine
Wood preservatives

(packaging and transport of, stds. for)
IT 100-37-8, Diethylaminoethanol 100-39-0, Benzyl bromide 100-41-4,
Ethylbenzene, miscellaneous 100-42-5, miscellaneous 100-44-7, Benzyl
chloride, miscellaneous 100-47-0, Benzonitrile, miscellaneous
100-50-5, 1,2,3,6-Tetrahydrobenzaldehyde 100-57-2, Phenylmercuric
hydroxide 100-61-8, N-Methylaniline, miscellaneous 100-63-0,
Phenylhydrazine 100-66-3, Anisole, miscellaneous 100-73-2, Acrolein

dimer 101-25-7, N,N'-Dinitrosopentamethylenetetramine 101-68-8
 101-77-9, 4,4'-Diaminodiphenyl methane 101-83-7, Dicyclohexylamine
 102-69-2, Tripropylamine 102-70-5, Triallylamine 102-81-8,
 Dibutylaminoethanol 102-82-9, Tributylamine 103-65-1, n-Propylbenzene
 103-69-5, N-Ethylaniline 103-71-9, **Phenylisocyanate**,
 miscellaneous 103-80-0, Phenylacetyl chloride 103-83-3,
 Benzyldimethylamine 104-15-4, Toluene sulfonic acid, miscellaneous
 104-51-8, Butylbenzene 104-75-6, 2-Ethylhexylamine 104-78-9
 104-90-5, 2-Methyl-5-ethylpyridine 105-36-2 105-37-3, Ethyl propionate
 105-39-5, Ethyl chloroacetate 105-48-6, Isopropyl chloroacetate
 105-54-4, Ethyl butyrate 105-56-6, Ethyl cyanoacetate 105-57-7, Acetal
 105-58-8, Diethyl carbonate **105-64-6**, Isopropyl
 peroxydicarbonate 105-74-8, Lauroyl peroxide 106-31-0, Butyric
 anhydride 106-44-5, p-Cresol, miscellaneous 106-46-7,
 p-Dichlorobenzene 106-50-3, p-Phenylenediamine, miscellaneous
 106-51-4, 2,5-Cyclohexadiene-1,4-dione, miscellaneous 106-63-8, Isobutyl
 acrylate 106-68-3, Ethyl amyl ketone 106-88-7, 1,2-Butylene oxide
 106-89-8, miscellaneous 106-92-3, Allyl glycidyl ether 106-93-4,
 Ethylene dibromide 106-95-6, Allyl bromide, miscellaneous 106-96-7,
 3-Bromopropyne 106-97-8, Butane, miscellaneous 106-97-8D, Butane,
 mixts. 106-99-0, 1,3-Butadiene, miscellaneous 107-00-6, Ethylacetylene
 107-02-8, 2-Propenal, miscellaneous 107-05-1, Allyl chloride 107-06-2,
 Ethylene dichloride, miscellaneous 107-07-3, Ethylene chlorohydrin,
 miscellaneous 107-10-8, Propylamine, miscellaneous 107-11-9,
 Allylamine 107-12-0, Propionitrile 107-13-1, Acrylonitrile,
 miscellaneous 107-14-2, Chloroacetonitrile 107-15-3, Ethylenediamine,
 miscellaneous 107-18-6, Allyl alcohol, miscellaneous 107-19-7,
 Propargyl alcohol 107-20-0, Chloroacetaldehyde 107-25-5, Vinylmethyl
 ether 107-29-9, Acetaldehyde oxime 107-30-2, Methylchloromethyl ether
 107-31-3, Methyl formate 107-37-9, Allyltrichlorosilane 107-49-3,
 Tetraethyl pyrophosphate 107-70-0 107-71-1, tert-Butyl peroxyacetate
 107-72-2, Amyltrichlorosilane 107-81-3, 2-Bromopentane 107-82-4,
 1-Bromo-3-methylbutane 107-87-9, Methyl propyl ketone 107-89-1, Aldol
 107-92-6, Butyric acid, miscellaneous 108-01-0, Dimethylethanolamine
 108-05-4, Acetic acid ethenyl ester, miscellaneous 108-09-8,
 1,3-Dimethylbutylamine 108-10-1, Methyl isobutyl ketone 108-11-2,
 Methyl isobutyl carbinol 108-18-9, Diisopropylamine 108-20-3,
 Diisopropyl ether 108-21-4, Isopropyl acetate 108-22-5, Isopropenyl
 acetate 108-23-6, Isopropyl chloroformate 108-24-7, Acetic anhydride
 108-31-6, 2,5-Furandione, miscellaneous 108-39-4, miscellaneous
 108-45-2, m-Phenylenediamine, miscellaneous 108-46-3, Resorcinol,
 miscellaneous 108-67-8, miscellaneous 108-77-0 108-83-8, Diisobutyl
 ketone 108-84-9 108-86-1, Benzene, bromo-, miscellaneous 108-87-2,
 Methyl cyclohexane 108-88-3, Toluene, miscellaneous 108-90-7,
 Chlorobenzene, miscellaneous 108-91-8, Cyclohexylamine, miscellaneous
 108-94-1, Cyclohexanone, miscellaneous 108-95-2, Phenol, miscellaneous
 108-98-5, Phenyl mercaptan, miscellaneous 109-02-4 109-09-1,
 2-Chloropyridine 109-13-7, tert-Butyl peroxyisobutyrate 109-52-4,
 Valeric acid, miscellaneous 109-53-5, Vinyl isobutyl ether 109-60-4,
 n-Propyl acetate 109-61-5, n-Propyl chloroformate 109-63-7, Boron
 trifluoride diethyl etherate 109-65-9, n-Butyl bromide 109-66-0,
 Pentane, miscellaneous 109-70-6, 1-Chloro-3-bromopropane 109-73-9,
 n-Butylamine, miscellaneous 109-74-0, Butyronitrile 109-77-3,
 Malononitrile 109-79-5, Butyl mercaptan 109-86-4, Ethylene glycol
 monomethyl ether 109-87-5, Methylal 109-89-7, Diethylamine,
 miscellaneous 109-90-0, Ethyl **isocyanate** 109-92-2, Vinyl
 ethyl ether 109-93-3, Divinyl ether 109-94-4, Ethyl formate
 109-95-5, Ethyl nitrite 109-99-9, Tetrahydrofuran, miscellaneous
 110-00-9, Furan 110-01-0, Tetrahydrothiophene 110-02-1, Thiophene

110-12-3, 5-Methylhexan-2-one 110-16-7, Maleic acid, miscellaneous
 110-18-9 110-19-0 110-22-5, Diacetyl peroxide 110-43-0, Amyl methyl
 ketone 110-49-6 110-54-3, Hexane, miscellaneous 110-58-7, Amylamine
 110-62-3, Valeraldehyde 110-66-7, Amyl mercaptan 110-68-9,
 N-Methylbutylamine 110-69-0, Butyraldohime 110-71-4,
 1,2-Dimethoxyethane 110-74-7, Propyl formate 110-78-1, n-Propyl
isocyanate 110-80-5, Ethylene glycol monoethyl ether 110-82-7,
 Cyclohexane, miscellaneous 110-83-8, Cyclohexene, miscellaneous
 110-85-0, Piperazine, miscellaneous 110-86-1, Pyridine, miscellaneous
 110-87-2 110-89-4, Piperidine, miscellaneous 110-91-8, Morpholine,
 miscellaneous 110-96-3, Diisobutylamine 111-15-9, Ethylene glycol
 monoethyl ether acetate 111-34-2, Butylvinyl ether 111-36-4, n-Butyl
isocyanate 111-40-0 111-43-3, Dipropyl ether 111-49-9,
 Hexamethylenimine 111-65-9, Octane, miscellaneous 111-69-3,
 Adiponitrile 111-71-7, n-Heptaldehyde 111-76-2, Ethylene glycol
 monobutyl ether 111-92-2, Di-n-butylamine 112-04-9 112-24-3,
 Triethylenetetramine 112-57-2 115-07-1, Propylene, miscellaneous
 115-10-6, Dimethyl ether 115-11-7, Isobutylene, miscellaneous
 115-21-9, Ethyltrichlorosilane 115-25-3, Octafluorocyclobutane
 116-14-3, Tetrafluoroethylene, miscellaneous 116-15-4,
 Hexafluoropropylene 116-16-5, Hexachloroacetone 116-54-1, Methyl
 dichloroacetate 118-74-1, Hexachlorobenzene 118-96-7, Trinitrotoluene
 120-92-3, Cyclopentanone 121-43-7, Trimethyl borate 121-44-8,
 Triethylamine, miscellaneous 121-45-9, Trimethyl phosphite 121-46-0,
 2,5-Norbornadiene 121-69-7, N,N-Dimethylaniline, miscellaneous
 121-73-3 121-82-4, Cyclotrimethylenetrinitramine 122-51-0, Ethyl
 orthoformate 122-52-1, Triethyl phosphite 123-00-2,
 4-Morpholinepropanamine 123-15-9 123-19-3, Dipropylketone 123-20-6,
 Vinyl butyrate 123-23-9, Succinic acid peroxide 123-30-8,
 p-Aminophenol 123-31-9, Hydroquinone, miscellaneous 123-38-6,
 Propionaldehyde, miscellaneous 123-42-2, Diacetone alcohol 123-54-6,
 2,4-Pentanedione, miscellaneous 123-62-6, Propionic anhydride
 123-63-7, Paraldehyde 123-72-8, Butyraldehyde 123-75-1, Pyrrolidine,
 miscellaneous 123-86-4, Butyl acetate 123-91-1, Dioxane, miscellaneous
 124-02-7, Diallylamine 124-09-4, Hexamethylenediamine, miscellaneous
 124-13-0, Octyl aldehyde 124-18-5, n-Decane 124-38-9, Carbon dioxide,
 miscellaneous 124-40-3, Dimethylamine, miscellaneous 124-41-4, Sodium
 methylate 124-43-6 124-65-2, Sodium cacodylate 126-98-7,
 Methacrylonitrile 126-99-8, Chloroprene 127-18-4, Tetrachloroethylene,
 miscellaneous 127-85-5, Sodium arsanilate 129-79-3 131-52-2, Sodium
 pentachlorophenate 131-73-7, Hexanitrodiphenylamine 131-74-8, Ammonium
 picrate 133-14-2 133-55-1, N,N'-Dinitroso-N,N'-dimethyl
 terephthalamide 134-32-7, α -Naphthylamine 138-86-3, Dipentene
 138-89-6 139-02-6, Sodium phenolate

RL: ADV (Adverse effect, including toxicity); PEP (Physical, engineering
 or chemical process); BIOL (Biological study); PROC (Process)
 (packaging and transport of, stds. for)

IT 140-29-4, Phenylacetoneitrile 140-31-8, 1-Piperazineethanamine 140-80-7
 140-88-5 141-32-2 141-43-5, Ethanolamine, miscellaneous 141-57-1,
 Propyltrichlorosilane 141-59-3, tert-Octylmercaptan 141-75-3, Butyryl
 chloride 141-78-6, Ethyl acetate, miscellaneous 141-79-7, Mesityl
 oxide 142-04-1, Aniline hydrochloride 142-29-0, Cyclopentene
 142-62-1, Hexanoic acid, miscellaneous 142-82-5, Heptane, miscellaneous
 142-84-7, Dipropylamine 142-96-1, Dibutyl ether 143-33-9, Sodium
 cyanide 144-49-0, Fluoroacetic acid 144-62-7D, Ethanedioic acid, salts
 146-84-9, Silver picrate 149-74-6, Methylphenyldichlorosilane
 151-50-8, Potassium cyanide 151-56-4, Ethylenimine, miscellaneous
 156-62-7, Calcium cyanamide 260-94-6, Acridine 283-66-9, Hexamethylene
 triperoxide diamine 287-23-0, Cyclobutane 287-92-3, Cyclopentane

291-64-5, Cycloheptane 298-00-0, Methyl parathion 298-07-7 302-01-2, Hydrazine, miscellaneous 309-00-2, Aldrin 352-93-2, Diethyl sulfide 353-36-6, Ethyl fluoride 353-42-4, Boron trifluoride dimethyl etherate 353-50-4, Carbonyl fluoride 353-59-3 354-32-5, Trifluoroacetylchloride 357-57-3, Brucine 360-89-4, Octafluorobut-2-ene 428-59-1, Hexafluoropropylene oxide 431-03-8, Butanedione 460-19-5, Cyanogen 462-06-6, Fluorobenzene 462-08-8, m-Aminopyridine 462-95-3, Diethoxymethane 463-04-7, Amyl nitrite 463-49-0, Propadiene 463-58-1, Carbonyl sulfide 463-71-8, Thiophosgene 463-82-1, 2,2-Dimethylpropane 479-45-8 501-53-1, Benzyl chloroformate 502-98-7D, salts 503-74-2, Isopentanoic acid 504-24-5, 4-Pyridinamine 504-29-0, 2-Pyridinamine 506-64-9, Silver cyanide (Ag(CN)) 506-68-3, Cyanogen bromide 506-77-4, Cyanogen chloride 506-85-4, Fulminic acid 506-93-4, Guanidine nitrate 506-96-7, Acetyl bromide 507-02-8, Acetyl iodide 507-09-5, Thioacetic acid, miscellaneous 507-70-0, Borneol 509-14-8, Tetranitromethane 512-85-6, Ascaridole 513-35-9, 2-Methyl-2-butene 513-38-2 513-42-8, Methallyl alcohol 513-48-4, 2-Iodobutane 513-86-0, Acetyl methyl carbinol 517-25-9, Trinitromethane 517-92-0, 1,8-Dihydroxy-2,4,5,7-tetranitroanthraquinone 519-44-8D, 2,4-Dinitroresorcinol, heavy metal salts 532-27-4, Chloracetophenone 533-51-7, Silver oxalate 534-07-6, 1,3-Dichloroacetone 534-15-6, 1,1-Dimethoxyethane 534-22-5, 2-Methylfuran 535-13-7, Ethyl-2-chloropropionate 540-18-1, Amyl butyrate 540-42-1, Isobutyl propionate 540-54-5, Propyl chloride 540-67-0, Ethyl methyl ether 540-73-8 540-82-9, Ethylsulfuric acid 540-84-1, Isooctane 541-41-3, Ethyl chloroformate 542-55-2, Isobutyl formate 542-62-1, Barium cyanide 542-88-1, Dichlorodimethyl ether, symmetrical 543-27-1, Isobutyl chloroformate 543-59-9, Amyl chloride 544-16-1, Butyl nitrite 544-25-2, Cycloheptatriene 544-97-8, Dimethyl zinc 545-55-1, Tris(1-aziridinyl)phosphine oxide 554-12-1, Methyl propionate 554-84-7, m-Nitrophenol 555-54-4, Magnesium diphenyl 556-24-1, Methyl isovalerate 556-56-9, Allyl iodide 556-61-6, Methyl isothiocyanate 556-88-7 556-89-8, Nitrourea 557-17-5, Methyl propyl ether 557-19-7, Nickel cyanide (Ni(CN)₂) 557-20-0, Diethylzinc 557-21-1, Zinc cyanide 557-31-3, Allyl ethyl ether 557-40-4, Diallylether 557-98-2, 2-Chloropropene 558-13-4, Carbon tetrabromide 563-45-1, 3-Methyl-1-butene 563-46-2, 2-Methyl-1-butene 563-47-3, Methyl allyl chloride 563-80-4, 3-Methylbutan-2-one 578-54-1, 2-Ethylaniline 578-94-9, Diphenylamine chloroarsine 582-61-6, Benzoyl azide 583-15-3, Mercury benzoate 584-79-2, Allethrin 585-79-5, 1-Bromo-3-nitrobenzene 586-62-9, Terpinolene 587-85-9D, compds. 590-01-2, Butylpropionate 590-36-3, 2-Methylpentan-2-ol 591-27-5, m-Aminophenol 591-87-7, Allyl acetate 591-89-9, Mercuric potassium cyanide 592-01-8, Calcium cyanide 592-05-2, Lead cyanide (Pb(CN)₂) 592-34-7, n-Butylchloroformate 592-41-6, 1-Hexene, miscellaneous 592-55-2, 2-Bromoethyl ethyl ether 592-63-2 592-84-7, n-Butylformate 593-53-3, Methyl fluoride 593-60-2, Vinyl bromide 593-89-5, Methylchloroarsine 594-42-3, Perchloromethylmercaptan 594-72-9, 1,1-Dichloro-1-nitroethane 598-14-1, Ethyldichloroarsine 598-21-0, Bromoacetyl bromide 598-31-2, Bromoacetone 598-57-2, Methyl nitramine 598-57-2D, Methyl nitramine, metal salts 598-58-3, Methyl nitrate 598-73-2, Bromotrifluoroethylene 598-78-7, α -Chloropropionic acid 598-99-2, Methyl trichloroacetate 602-96-0, 1,3,5-Trimethyl-2,4,6-trinitrobenzene 602-99-3, Trinitro-m-cresol 602-99-3D, Methyl picric acid, heavy metal salts 608-50-4, 2,4-Dinitro-1,3,5-trimethylbenzene 610-38-8, 4-Bromo-1,2-dinitrobenzene 616-38-6, Dimethyl carbonate 616-74-0D, 4,6-Dinitroresorcinol, heavy metal salts 617-37-8 617-50-5, Isopropyl isobutyrate 617-89-0, Furfurylamine 619-97-6, Benzene diazonium nitrate 620-05-3, Benzyl iodide 622-44-6, Phenylcarbylamine

chloride 622-45-7, Cyclohexyl acetate 623-42-7, Methyl butyrate 623-87-0, Glycerol-1,3-dinitrate 624-61-3, Dibromoacetylene 624-74-8, Diiodoacetylene 624-83-9, Methyl **isocyanate** 624-91-9, Methyl nitrite 624-92-0, Dimethyl disulfide 625-76-3, Dinitromethane 626-67-5, 1-Methylpiperidine 627-13-4, n-Propyl nitrate 627-30-5 627-63-4, Fumaryl chloride 628-28-4, Butyl methyl ether 628-32-0, Ethyl propyl ether 628-63-7, Amyl acetate 628-81-9, Ethyl butyl ether 628-86-4, Mercury fulminate 628-92-2, Cycloheptene 628-96-6, Ethylene glycol dinitrate 629-13-0, 1,2-Diazidoethane 629-14-1 629-20-9, Cyclooctatetraene 630-08-0, Carbon monoxide, miscellaneous 630-72-8, Trinitroacetone 637-78-5, Isopropyl propionate 638-11-9, Isopropyl butyrate 638-29-9, Valeryl chloride 638-49-3, Amyl formate 641-16-7, 2,3,4,6-Tetranitrophenol 644-31-5, Acetyl benzoyl peroxide 644-97-3, Phenyl phosphorus dichloride 645-55-6, N-Nitroaniline 646-06-0, Dioxolane 674-81-7, Nitrosoguanidine 674-82-8, Diketene 676-83-5, Methyl phosphonous dichloride 676-97-1, Methyl phosphonic dichloride 676-98-2, Methyl phosphonothioic dichloride 677-71-4, Hexafluoroacetone hydrate 681-84-5, Methyl orthosilicate 684-16-2, Hexafluoroacetone 693-21-0, Diethylene glycol dinitrate 694-05-3, 1,2,3,6-Tetrahydropyridine 757-58-4, Hexaethyl tetraphosphate 762-12-9, Decanoyl peroxide 762-13-0, Pelargonyl peroxide 762-16-3 765-34-4, Glycidaldehyde 766-09-6, 1-Ethylpiperidine 771-29-9, Tetralin hydroperoxide 776-74-9, Diphenylmethyl bromide 814-78-8, Methyl isopropenyl ketone 822-06-0 831-52-7, Sodium picramate 883-40-9, Diazodiphenylmethane 918-37-6, Hexanitroethane 918-54-7, Trinitroethanol 926-63-6 926-64-7, 2-Dimethylaminoacetone 928-65-4, Hexyltrichlorosilane 929-06-6, 2-(2-Aminoethoxy)ethanol 993-00-0, Methylchlorosilane 993-12-4 993-43-1, Ethyl phosphonothioic dichloride 1002-16-0, Amyl nitrate 1070-19-5, tert-Butoxycarbonyl azide 1120-21-4, Undecane 1125-27-5

RL: ADV (Adverse effect, including toxicity); PEP (Physical, engineering or chemical process); BIOL (Biological study); PROC (Process) (packaging and transport of, stds. for)

IT 1126-78-9 1187-93-5, Perfluoromethyl vinyl ether 1299-86-1, Aluminum carbide 1300-64-7, Anisoyl chloride 1300-71-6, Xylenol 1300-73-8D, derivs. 1303-28-2, Arsenic pentoxide 1303-33-9, Arsenic sulfide 1303-33-9D, Arsenic sulfide, mixture with chlorates 1304-28-5, Barium oxide, miscellaneous 1304-29-6, Barium peroxide 1305-78-8, Calcium oxide, miscellaneous 1305-79-9, Calcium peroxide 1305-99-3, Calcium phosphide 1309-60-0, Lead dioxide 1310-58-3, Potassium hydroxide, miscellaneous 1310-65-2, Lithium hydroxide 1310-73-2, Sodium hydroxide, miscellaneous 1310-82-3, Rubidium hydroxide 1312-73-8, Potassium sulfide 1313-60-6, Sodium peroxide 1313-82-2, Sodium sulfide, miscellaneous 1314-18-7, Strontium peroxide 1314-22-3, Zinc peroxide 1314-24-5, Phosphorus trioxide 1314-34-7, Vanadium trioxide 1314-56-3, Phosphorus pentoxide, miscellaneous 1314-62-1, Vanadium pentoxide, miscellaneous 1314-80-3, Phosphorus sulfide (P2S5) 1314-84-7, Zinc phosphide 1314-85-8, Phosphorus sesquisulfide 1319-77-3, Cresylic acid 1320-37-2, Dichlorotetrafluoroethane 1321-10-4, Chlorocresol 1321-31-9, Phenetidine 1327-53-3, Arsenic trioxide 1330-20-7, Xylene, miscellaneous 1330-45-6, Chlorotrifluoroethane 1330-78-5, Tricresyl phosphate 1331-22-2, Methyl cyclohexanone 1332-12-3, Fulminating gold 1332-37-2, Iron oxide, properties 1333-39-7, Phenolsulfonic acid 1333-41-1, Picoline 1333-74-0, Hydrogen, miscellaneous 1333-82-0, Chromium trioxide 1333-83-1, Sodium hydrogen fluoride 1335-26-8, Magnesium peroxide 1335-31-5, Mercury oxycyanide 1335-85-9, Dinitro-o-cresol 1336-21-6, Ammonium hydroxide 1337-81-1 1338-23-4, Methyl ethyl ketone peroxide 1341-24-8, Chloroacetophenone 1341-49-7, Ammonium hydrogen fluoride

1344-40-7, Lead phosphite, dibasic 1344-67-8, Copper chloride
1498-40-4, Ethyl phosphonous dichloride 1498-51-7, Ethyl
phosphorodichloridate 1569-69-3, Cyclohexyl mercaptan 1609-86-5,
tert-Butyl **isocyanate** 1623-15-0 1623-24-1, Isopropyl acid
phosphate 1634-04-4, Methyl-tert-butyl ether 1693-71-6, Triallyl
borate 1705-60-8, 2,2-Di(4,4-di-tert-butylperoxycyclohexyl)propane
1712-64-7, Isopropyl nitrate 1719-53-5, Diethyldichlorosilane
1737-93-5, 3,5-Dichloro-2,4,6-trifluoropyridine 1789-58-8,
Ethyldichlorosilane 1795-48-8, Isopropyl **isocyanate**
1838-59-1, Allyl formate 1873-29-6, Isobutyl **isocyanate**
1885-14-9, Phenylchloroformate 1947-27-9, Arsenic trichloride
2050-92-2, Di-n-amylamine 2094-98-6, 1,1'-Azodi(hexahydrobenzonitrile)
2144-45-8, Dibenzyl peroxydicarbonate 2155-71-7 2167-23-9,
2,2-Di(tert-butylperoxy)butane 2217-06-3, Dipicryl sulfide 2243-94-9,
1,3,5-Trinitronaphthalene 2244-21-5, Potassium dichloroisocyanurate
2294-47-5, p-Diazidobenzene 2312-76-7 2338-12-7, 5-Nitrobenzotriazole
2487-90-3, Trimethoxysilane 2508-19-2, Trinitrobenzenesulfonic acid
2524-03-0, Dimethyl chlorothiophosphate 2524-04-1, Diethylthiophosphoryl
chloride 2549-51-1, Vinyl chloroacetate 2551-62-4, Sulfur hexafluoride
2567-83-1, Tetraethylammonium perchlorate 2657-00-3, Sodium
2-diazo-1-naphthol-5-sulfonate 2691-41-0, Cyclotetramethylenetetranitram
ine 2696-92-6, Nitrosyl chloride 2699-79-8, Sulfuryl fluoride
2782-57-2, Dichloroisocyanuric acid 2782-57-2D, Dichloroisocyanuric
acid, salts 2820-51-1, Nicotine hydrochloride 2825-15-2 2855-13-2,
Isophoronediamine 2867-47-2, Dimethylaminoethyl methacrylate
2893-78-9, Sodium dichloroisocyanurate 2937-50-0, Allyl chloroformate
2941-64-2, Ethyl chlorothioformate 2980-64-5 3025-88-5,
2,5-Dimethyl-2,5-dihydroperoxy hexane 3031-74-1, Ethyl hydroperoxide
3032-55-1 3054-95-3, 3,3-Diethoxypropene 3087-37-4,
Tetrapropylorthotitanate 3129-90-6, Isothiocyanic acid 3129-91-7,
Dicyclohexylammonium nitrite 3132-64-7, Epibromohydrin 3165-93-3,
4-Chloro-o-toluidine hydrochloride 3173-53-3, Cyclohexyl
isocyanate 3179-56-4, Acetyl cyclohexanesulfonyl peroxide
3188-13-4, Chloromethyl ethyl ether 3248-28-0, Dipropionyl peroxide
3268-49-3 3275-73-8, Nicotine tartrate 3282-30-2, Trimethylacetyl
chloride 3497-00-5, Phenyl phosphorus thiodichloride 3689-24-5
3724-65-0, Crotonic acid 3811-04-9, Potassium chlorate 3926-62-3,
Sodium chloroacetate 3982-91-0, Thiophosphoryl chloride 4016-11-9,
1,2-Epoxy-3-ethoxypropane 4098-71-9 4109-96-0, Dichlorosilane
4170-30-3, Crotonaldehyde 4300-97-4 4316-42-1, N-n-Butylimidazole
4419-11-8, 2,2'-Azodi(2,4-dimethylvaleronitrile) 4421-50-5 4435-53-4,
Butoxyl 4452-58-8, Sodium percarbonate 4472-06-4, Carbonazidodithioic
acid 4484-72-4, Dodecyltrichlorosilane 4528-34-1 4547-70-0
4591-46-2 4682-03-5, Diazodinitrophenol 4795-29-3,
Tetrahydrofurfurylamine 4904-61-4, 1,5,9-Cyclododecatriene 5283-66-9,
Octyltrichlorosilane 5283-67-0, Nonyltrichlorosilane 5329-14-6,
Sulfamic acid 5419-55-6, Triisopropyl borate 5610-59-3, Silver
fulminate 5637-83-2, Cyanuric triazide 5653-21-4 5894-60-0,
Hexadecyltrichlorosilane 5970-32-1, Mercury salicylate 6023-29-6
6275-02-1 6423-43-4 6427-21-0, Methoxymethyl **isocyanate**
6484-52-2, Nitric acid ammonium salt, properties 6484-52-2D, Ammonium
nitrate, mixts. with fuel oils 6505-86-8, Nicotine sulfate 6659-60-5,
1,2,4-Butanetriol trinitrate 6842-15-5, Propylene tetramer 7304-92-9
7332-16-3, Inositol hexanitate 7429-90-5, Aluminum, miscellaneous
7429-90-5D, Aluminum, alkyl derivs. 7439-90-9, Krypton, miscellaneous
7439-92-1D, Lead, compds. 7439-93-2, Lithium, miscellaneous
7439-93-2D, Lithium, alkyl derivs. 7439-95-4, Magnesium, miscellaneous
7439-95-4D, Magnesium, alkyl derivs. 7439-97-6, Mercury, miscellaneous
7439-97-6D, Mercury, compds. 7440-01-9, Neon, miscellaneous 7440-09-7,

Potassium, miscellaneous 7440-17-7, Rubidium, miscellaneous 7440-21-3, Silicon, miscellaneous 7440-23-5, Sodium, miscellaneous 7440-28-0D, Thallium, compds. 7440-29-1, Thorium, miscellaneous 7440-31-5D, Tin, organic compds. 7440-32-6, Titanium, properties 7440-36-0, Antimony, miscellaneous 7440-36-0D, Antimony, inorg. and organic compds. 7440-37-1, Argon, miscellaneous 7440-38-2, Arsenic, miscellaneous 7440-39-3, Barium, miscellaneous 7440-39-3D, Barium, alloys 7440-39-3D, Barium, compds. 7440-41-7, Beryllium, miscellaneous 7440-41-7D, Beryllium, compds. 7440-43-9D, Cadmium, compds. 7440-44-0, Carbon, miscellaneous 7440-45-1, Cerium, miscellaneous 7440-46-2, Cesium, miscellaneous 7440-55-3, Gallium, miscellaneous 7440-58-6, Hafnium, miscellaneous 7440-59-7, Helium, miscellaneous 7440-61-1, Uranium, miscellaneous 7440-63-3, Xenon, miscellaneous 7440-66-6, Zinc, miscellaneous 7440-67-7, Zirconium, miscellaneous 7440-70-2, Calcium, miscellaneous 7440-70-2D, Calcium, alloys 7446-09-5, Sulfur dioxide, miscellaneous 7446-11-9, Sulfur trioxide, miscellaneous 7446-14-2, Lead sulfate 7446-18-6, Thallium sulfate 7446-70-0, Aluminum chloride (AlCl₃), miscellaneous 7487-94-7, Mercuric chloride, miscellaneous 7488-56-4, Selenium disulfide 7521-80-4, Butyltrichlorosilane 7550-45-0, Titanium tetrachloride, miscellaneous 7570-26-5, 1,2-Dinitroethane 7572-29-4, Dichloroacetylene 7578-36-1 7580-67-8, Lithium hydride 7601-89-0, Sodium perchlorate 7601-90-3, Perchloric acid, miscellaneous 7616-94-6, Perchloryl fluoride 7631-89-2, Sodium arsenate 7631-99-4, Sodium nitrate, miscellaneous 7632-00-0, Sodium nitrite 7632-51-1, Vanadium tetrachloride 7637-07-2, Boron trifluoride, miscellaneous 7645-25-2, Lead arsenate 7646-69-7, Sodium hydride 7646-78-8, Stannic chloride, miscellaneous 7646-85-7, Zinc chloride, miscellaneous 7646-93-7, Potassium hydrogen sulfate 7647-01-0, Hydrogen chloride, miscellaneous 7647-18-9, Antimony pentachloride 7647-19-0, Phosphorus pentafluoride

RL: ADV (Adverse effect, including toxicity); PEP (Physical, engineering or chemical process); BIOL (Biological study); PROC (Process)
(packaging and transport of, stds. for)

IT 13597-99-4, Beryllium nitrate 13598-36-2, Phosphonic acid 13637-63-3, Chlorine pentafluoride 13637-76-8, Lead perchlorate 13718-59-7 13746-89-9, Zirconium nitrate 13762-51-1, Potassium borohydride 13766-44-4, Mercury sulfate 13769-43-2, Potassium metavanadate 13770-96-2, Sodium aluminum hydride 13774-25-9 13779-41-4, Difluorophosphoric acid 13780-03-5, Calcium bisulfite 13823-29-5, Thorium nitrate 13840-33-0, Lithium hypochlorite 13840-33-0D, Lithium hypochlorite, mixts. 13843-59-9, Ammonium bromate 13863-88-2, Silver azide 13967-90-3, Barium bromate 13973-87-0, Bromine azide 13973-88-1, Chlorine azide 13987-01-4, Tripropylene 14014-86-9 14019-91-1, Calcium selenate 14293-73-3 14448-38-5, Hyponitrous acid 14519-07-4, Zinc bromate 14519-17-6, Magnesium bromate 14546-44-2, Hydrazine azide 14567-73-8, Tremolite 14644-61-2, Zirconium sulfate 14666-78-5, Diethylperoxydicarbonate 14674-72-7, Calcium chlorite 14696-82-3, Iodine azide (I(N₃)) 14977-61-8 15195-06-9 15245-44-0, Lead trinitroresorcinat 15347-57-6, Lead acetate 15457-98-4 15512-36-4, Calcium dithionite 15545-97-8, 2,2'-Azodi(2,4-dimethyl-4-methoxyvaleronitile) 15598-34-2, Pyridine perchlorate 15718-71-5, Ethylenediamine diperchlorate 15825-70-4, Mannitol hexanitrate 15875-44-2, Methylamine perchlorate 16215-49-9, Di-n-butyl peroxydicarbonate 16229-43-9, Vanadyl sulfate 16339-86-9 16646-35-8 16721-80-5, Sodium hydrosulfide 16753-36-9, Copper acetylide 16853-85-3, Lithium aluminum hydride 16871-71-9, Zinc fluorosilicate 16871-90-2, Potassium fluorosilicate 16872-11-0 16893-85-9, Sodium fluorosilicate 16901-76-1, Thallium nitrate 16919-19-0, Ammonium fluorosilicate 16940-66-2, Sodium

borohydride 16940-81-1, Hexafluorophosphoric acid 16941-12-1,
 Chloroplatinic acid 16949-15-8, Lithium borohydride 16949-65-8,
 Magnesium fluorosilicate 16961-83-4, Fluorosilicic acid 16962-07-5,
 Aluminum borohydride 17014-71-0, Potassium peroxide 17068-78-9,
 Anthophyllite 17462-58-7, sec-Butyl chloroformate 17639-93-9,
 Methyl-2-chloropropionate 17687-37-5, Urea nitrate 17702-41-9,
 Decaborane 17861-62-0 18130-44-4, Titanium sulfate 18414-36-3
 18810-58-7, Barium azide 19159-68-3 19287-45-7, Diborane
 19287-45-7D, Diborane, mixts. 19624-22-7, Pentaborane 20062-22-0
 20236-55-9, Barium styphnate 20600-96-8 20816-12-0, Osmium tetroxide
 20820-44-4 20859-73-8, Aluminum phosphide 21351-79-1, Cesium hydroxide
 (Cs(OH)) 21569-01-7 21723-86-4 21985-87-5, Pentanitroaniline
 22128-62-7, Chloromethylchloroformate 22750-93-2, Ethyl perchlorate
 22751-24-2 22826-61-5 23414-72-4, Zinc permanganate 23745-86-0,
 Potassium fluoroacetate 24167-76-8, Sodium phosphide 24468-13-1,
 2-Ethylhexylchloroformate 24884-69-3 25013-15-4, Vinyl toluene
 25109-57-3 25134-21-8 25136-55-4, Dimethyldioxane 25154-42-1,
 Chlorobutane 25154-54-5, Dinitrobenzene 25155-15-1, Cymene
 25167-20-8, Tetrabromoethane 25167-67-3, Butylene 25167-70-8,
 Diisobutylene 25167-80-0, Chlorophenol 25168-05-2, Chlorotoluene
 25265-68-3, Methyltetrahydrofuran 25321-14-6, Dinitrotoluene
 25322-01-4, Nitropropane 25322-20-7, Tetrachloroethane 25323-30-2,
 Dichloroethylene 25339-56-4, Heptene 25340-17-4, Diethylbenzene
 25377-72-4, n-Amylene 25496-08-6, Fluorotoluene 25497-28-3,
 Difluoroethane 25497-29-4, Chlorodifluoroethane 25513-64-8
 25550-53-2 25550-55-4, Dinitrosobenzene 25550-58-7, Dinitrophenol
 25550-58-7D, Dinitrophenol, salts 25567-67-3, Chlorodinitrobenzene
 25567-68-4, Chloronitrotoluene 25639-42-3, Methylcyclohexanol
 25721-38-4, Lead picrate 25917-35-5, Hexanol 26134-62-3, Lithium
 nitride 26140-60-3D, Terphenyl, halo derivs. 26249-12-7,
 Dibromobenzene 26471-56-7, Dinitroaniline 26471-62-5, Toluene
diisocyanate 26506-47-8, Copper chlorate 26571-79-9
 26618-70-2 26628-22-8, Sodium azide 26638-19-7, Dichloropropane
 26645-10-3 26760-64-5, Isopentene 26762-93-6 26914-02-3, Iodopropane
 26915-12-8, Toluidine 26952-23-8, Dichloropropene 26952-42-1,
 Trinitroaniline 27134-26-5, Chloroaniline 27134-27-6, Dichloroaniline
 27137-85-5, Dichlorophenyltrichlorosilane 27152-57-4 27176-87-0,
 Dodecylbenzenesulfonic acid 27195-67-1, Dimethylcyclohexane 27215-10-7
 27236-46-0, Isohexene 27254-36-0, Nitronaphthalene 27458-20-4,
 Butyltoluene 27978-54-7, Hydrazine perchlorate 27986-95-4
 27987-06-0, Trifluoroethane 28260-61-9, Trinitrochlorobenzene
 28300-74-5, Antimony potassium tartrate 28324-52-9, Pinane hydroperoxide
 28479-22-3 28653-16-9 28679-16-5, **Trimethylhexamethylenediisocyan**
ate 28805-86-9, Butylphenol 29191-52-4, Anisidine 29306-57-8
 29790-52-1, Nicotine salicylate 29903-04-6 29965-97-7, Cyclooctadiene
 30236-29-4, Sucrose octanitrate 30525-89-4, Paraformaldehyde
 30553-04-9, Naphthylthiourea 30586-10-8, Dichloropentane 30586-18-6,
 Pentamethylheptane 31058-64-7 31212-28-9, Nitrobenzenesulfonic acid
 33453-96-2 33864-17-4 34216-34-7, Trimethylcyclohexylamine
 35296-72-1, Butanol 35860-50-5, Trinitrobenzoic acid 35860-51-6,
 Dinitroresorcinol 35884-77-6, Xylol bromide 36472-34-1, Chloropropene
 37020-93-2, Mercury cyanide (Hg(CN)) 37187-22-7, Acetyl acetone peroxide
 37206-20-5, Methyl isobutyl ketone peroxide 37273-91-9, Metaldehyde
 37320-91-5, Mercury iodide 37368-10-8, Aluminum vanadium oxide
 38139-71-8, Bromide chloride 38232-63-2, Mercurous azide 38483-28-2,
 Methylene glycol dinitrate 39377-49-6, Copper cyanide 39377-56-5, Lead
 sulfide 39404-03-0, Magnesium silicide 39409-64-8, TVOPA 39432-81-0
 39455-80-6, Ammonium sodium vanadium oxide 39990-99-3, Lithium acetylde
 ethylenediamine complex 40058-87-5, Isopropyl-2-chloropropionate

41195-19-1 41587-36-4, Chloronitroaniline 42296-74-2, Hexadiene
 43133-95-5, Methylpentane 50815-73-1 50874-93-6 51006-59-8
 51023-22-4, Trichlorobutene 51064-12-1 51312-23-3, Mercury bromide
 51317-24-9, Lead nitroresorcinate 51325-42-9, Copper selenite
 51845-86-4, Ethyl borate 52181-51-8 53014-37-2, Tetranitroaniline
 53408-91-6, Mercury thiocyanate 53422-49-4 53569-62-3 53839-08-0
 53906-68-6 54141-09-2, 1,4,-Butynediol 54413-15-9, Tritonal
 54727-89-8 54958-71-3 55510-04-8, Dinitroglycoluril 55810-17-8
 56929-36-3 56960-91-9 57607-37-1, Octolite 58164-88-8, Antimony
 lactate 58499-37-9 58933-55-4

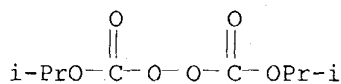
RL: ADV (Adverse effect, including toxicity); PEP (Physical, engineering
 or chemical process); BIOL (Biological study); PROC (Process)
 (packaging and transport of, stds. for)

IT 105-64-6, Isopropyl peroxydicarbonate 2144-45-8,
 Dibenzyl peroxydicarbonate 14666-78-5, Diethylperoxydicarbonate
 16215-49-9, Di-n-butyl peroxydicarbonate

RL: ADV (Adverse effect, including toxicity); PEP (Physical, engineering
 or chemical process); BIOL (Biological study); PROC (Process)
 (packaging and transport of, stds. for)

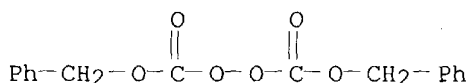
RN 105-64-6 HCAPLUS

CN Peroxydicarbonic acid, bis(1-methylethyl) ester (9CI) (CA INDEX NAME)



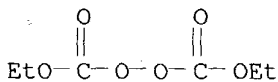
RN 2144-45-8 HCAPLUS

CN Peroxydicarbonic acid, bis(phenylmethyl) ester (9CI) (CA INDEX NAME)



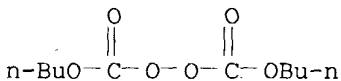
RN 14666-78-5 HCAPLUS

CN Peroxydicarbonic acid, diethyl ester (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)



RN 16215-49-9 HCAPLUS

CN Peroxydicarbonic acid, dibutyl ester (6CI, 8CI, 9CI) (CA INDEX NAME)



L60 ANSWER 20 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 1986:432994 HCAPLUS

DN 105:32994

KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505

TI One-step electrochemical image formation process
IN Pliefke, Engelbert
PA Hoechst A.-G. , Fed. Rep. Ger.
SO Ger. Offen., 48 pp.
CODEN: GWXXBX

DT Patent
LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 3416867	A1	19851114	DE 1984-3416867	19840508
	US 4614570	A	19860930	US 1985-730632	19850506
	JP 60244597	A2	19851204	JP 1985-96152	19850508
PRAI	DE 1984-3416867		19840508		

AB A 1-step electrochem. imaging and development or decoating process for use with com. reproduction layers upon the usual supports is described. In the process, the material, which has an elec. conductive support, is subjected to an elec. current by ≥ 1 needle-like electrode in the presence of an aqueous **electrolyte** solution containing ≥ 1 salt of an organic or inorg. acid from 0.1 weight% up to saturation and having a pH of 2.0 to 10.0. Thus, an electrochem. roughened and anodically oxidized Al foil was flow-coated with a pos.-working composition containing a cresol-HCHO novolak

6.6, 4-(2-phenylprop-2-yl)phenyl 1,2-naphthoquinone-2-diazido-4-sulfonate 1.1, 2,2'-bis[1,2-naphthoquinone-2-diazido-5-sulfonyloxy]dinaphthyl-1,1'-methane 0.6, 1,2-naphthoquinone-2-diazido-4-sulfonyl chloride 0.24, crystal violet 0.08, and a BuOAc-ethylene glycol mono-Me ether-THF (1:4-5) mixture 91.36 parts, dried, placed in an aqueous **electrolyte** solution containing Li2SO4 3 and Na octyl sulfate 1% (pH 3.5) and imaged with a needle electrode.

IC ICM G03F007-00

ICS B05D007-14; B41M005-20; B41N003-00; C25D011-04; C25D013-06

CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT Surfactants

(**electrolyte** solution containing, in one-step electrochem. imaging and development of photosensitive offset lithog. plates)

IT Vinyl acetal polymers

RL: USES (Uses)

(butyrals, reaction products with propenyl sulfonyl **isocyanate**, offset lithog. plates with photosensitive layers containing, one-step electrochem. imaging and development of)

IT 64-19-7, uses and miscellaneous 77-98-5 127-09-3 139-88-8 142-31-4
144-55-8, uses and miscellaneous 151-21-3, uses and miscellaneous
554-13-2 1330-43-4 7487-88-9, uses and miscellaneous 7631-99-4, uses and miscellaneous 7632-05-5 7647-14-5, uses and miscellaneous
7647-15-6, uses and miscellaneous 7722-76-1 7757-82-6, uses and miscellaneous 7772-98-7 7783-20-2, uses and miscellaneous 9043-30-5
10043-01-3 10043-35-3, uses and miscellaneous 10377-48-7 11105-06-9
24938-91-8 102847-97-2

RL: USES (Uses)

(**electrolyte** solution containing, in one-step electrochem. imaging and development of photosensitive offset lithog. plates)

IT 81-88-9 548-62-9 602-56-2 989-38-8 1042-84-8 1679-98-7

2481-94-9 2509-26-4D, reaction products with methoxydiphenylaminediazonium sulfate, mesitylene sulfonate 3453-83-6D, salts with bismethoxymethyldiphenyl ether-methoxydiphenylaminediazonium salt reaction products 9003-20-7 9003-35-4 9011-13-6 9016-83-5
13881-54-4D, reaction products with poly(vinyl butyral) 19778-85-9

22159-33-7 23121-00-8 25054-06-2 25086-15-1 29377-89-7D, reaction products with bismethoxymethyldiphenyl ether, mesitylene sulfonate
33910-44-0 36451-09-9 53050-67-2 **64523-73-5** 65846-95-9
67527-24-6 73477-92-6 82721-52-6 84886-87-3 89800-44-2
102966-34-7

RL: USES (Uses)

(offset lithog. plates with photosensitive layer containing, one-step electrochem. imaging and development process for)

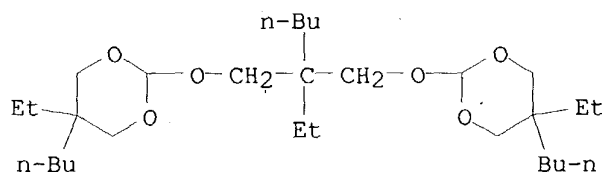
IT **64523-73-5**

RL: USES (Uses)

(offset lithog. plates with photosensitive layer containing, one-step electrochem. imaging and development process for)

RN 64523-73-5 HCAPLUS

CN 1,3-Dioxane, 2,2'-[(2-butyl-2-ethyl-1,3-propanediyl)bis(oxy)]bis[5-butyl-5-ethyl- (9CI) (CA INDEX NAME)



L60 ANSWER 21 OF 21 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 1984:165448 HCAPLUS
DN 100:165448
TI Electrochemical development process for copying layers
IN Pliefke, Engelbert
PA Hoechst A.-G., Fed. Rep. Ger.
SO Ger. Offen., 38 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 3134054	A1	19830505	DE 1981-3134054	19810828
	ZA 8205879	A	19830629	ZA 1982-5879	19820813
	CA 1189378	A1	19850625	CA 1982-409425	19820813
	US 4549944	A	19851029	US 1982-408906	19820817
	EP 73445	B1	19860611	EP 1982-107707	19820823
	R: AT, BE, CH, DE, FR, GB, IT, LI, NL, SE				
	AT 20394	E	19860615	AT 1982-107707	19820823
	AU 8287543	A1	19830303	AU 1982-87543	19820824
	JP 58042042	A2	19830311	JP 1982-146306	19820825
	JP 03047495	B4	19910719		
	FI 8202965	A	19830301	FI 1982-2965	19820826
	ES 515330	A1	19830601	ES 1982-515330	19820827
	BR 8205025	A	19830809	BR 1982-5025	19820827
PRAI	DE 1981-3134054		19810828		
	EP 1982-107707		19820823		

AB Photosensitive compns. for offset printing plates and photoresists are readily electrochem. developed by removing the nonexposed portion of the photosensitive layer with an aqueous **electrolyte** bath at pH 2-10 containing ≥ 1 organic or inorg. acid salt from 0.1 weight% to the saturation limit

and a surfactant 0.1-5 weight% with a c.d. of 1-100 A/dm² at 20-70%. Thus, an electrochem. roughened and anodized Al foil was coated with a pos-working photosensitive composition containing cresol-HCHO polymer, 4-(2-phenylprop-2-yl)phenyl 1,2-naphthoquinone-2-diazide-4-sulfonate, 2,2'-bis(1,2-naphthoquinone-2-diazide-5-sulfonyloxy)dinaphthyl-(1,1')-methane, 1,2-naphthoquinone-2-diazide-4-sulfochloride, crystal violet, ethylene glycol monomethyl ether, THF, and BuOAc. This coated plate was exposed and the developed in a solution containing 3% Li₂SO₄ and 1% Na octyl sulfate at pH 3.5 under 20 V for 11-14 s to give a printing plate.

IC G03C005-24; G03F007-00; G03G013-10

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT Vinyl acetal polymers

RL: USES (Uses)

(butyrals, reaction products with propenyl sulfonyl **isocyanate**, offset lithog. plates with photosensitive layers containing, electrochem. development of)

IT 64-19-7, uses and miscellaneous 77-98-5 127-09-3 142-87-0
144-55-8, uses and miscellaneous 151-21-3, uses and miscellaneous
554-13-2 1330-43-4 5324-84-5 7487-88-9, uses and miscellaneous
7601-54-9 7631-99-4, uses and miscellaneous 7647-14-5, uses and
miscellaneous 7647-15-6, uses and miscellaneous 7757-82-6, uses and
miscellaneous 7772-98-7 9043-30-5 10043-01-3 10043-35-3, uses and
miscellaneous 10124-31-9 10377-48-7 11105-06-9 89697-46-1
89761-16-0

RL: USES (Uses)

(**electrolyte** solution containing, in electrochem. development of photosensitive offset lithog. plates)

IT 57-13-6D, polymers 467-63-0 548-62-9 602-56-2 989-38-8 1042-84-8
2481-94-9 5284-79-7 9003-35-4 9016-83-5 19778-85-9 23121-00-8
25086-15-1 33910-44-0 36451-09-9 36482-93-6 53050-67-2
64523-73-5 67527-24-6 82721-52-6 83046-04-2 89697-35-8
89777-73-1 89800-44-2

RL: USES (Uses)

(offset lithog. plate with photosensitive layer containing, electrochem. development of)

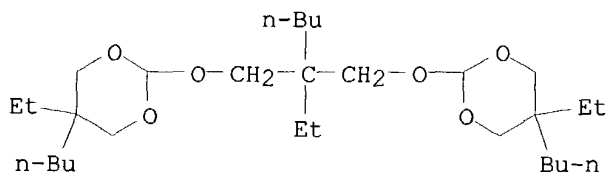
IT **64523-73-5**

RL: USES (Uses)

(offset lithog. plate with photosensitive layer containing, electrochem. development of)

RN 64523-73-5 HCAPLUS

CN 1,3-Dioxane, 2,2'-[(2-butyl-2-ethyl-1,3-propanediyl)bis(oxy)]bis[5-butyl-5-ethyl- (9CI) (CA INDEX NAME)

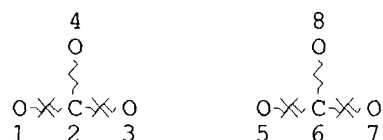


=> => D QUE

L2 17 SEA FILE=REGISTRY ABB=ON (25722-70-7/BI OR 9002-89-5/BI OR
123-25-1/BI OR 153550-33-5/BI OR 21324-40-3/BI OR 25014-41-9/BI
OR 25766-14-7/BI OR 26915-72-0/BI OR 437552-20-0/BI OR

437552-21-1/BI OR 437552-22-2/BI OR 437552-23-3/BI OR 7439-93-2
/BI OR 7440-44-0/BI OR 78-67-1/BI OR 9004-64-2/BI OR 96344-18-2
/BI)

L3 STR



NODE ATTRIBUTES:

NSPEC	IS	RC	AT	1
NSPEC	IS	RC	AT	2
NSPEC	IS	RC	AT	3
NSPEC	IS	RC	AT	5
NSPEC	IS	RC	AT	6
NSPEC	IS	RC	AT	7

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 8

STEREO ATTRIBUTES: NONE

L5	14251	SEA	FILE=REGISTRY	SSS	FUL	L3
L6	66509	SEA	FILE=REGISTRY	ABB=ON	PUR/PCT	
L7	3	SEA	FILE=REGISTRY	ABB=ON	L2 AND L6	
L8	294092	SEA	FILE=REGISTRY	ABB=ON	PACR/PCT	
L9	5	SEA	FILE=REGISTRY	ABB=ON	L8 AND L2	
L10	12588	SEA	FILE=REGISTRY	ABB=ON	L6 AND L8	
L11	55	SEA	FILE=REGISTRY	ABB=ON	L5 AND L6	
L14	12510	SEA	FILE=HCAPLUS	ABB=ON	L5	
L16	8	SEA	FILE=HCAPLUS	ABB=ON	L14 AND GEL(5A)ELECTROLYTE?	
L17	5105	SEA	FILE=HCAPLUS	ABB=ON	L10	
L18	38	SEA	FILE=HCAPLUS	ABB=ON	L14 AND L17	
L19	1	SEA	FILE=HCAPLUS	ABB=ON	L18 AND ELECTROLYTE?	
L20	1	SEA	FILE=HCAPLUS	ABB=ON	L18 AND BATTER?	
L21	38449	SEA	FILE=HCAPLUS	ABB=ON	L6	
L22	177	SEA	FILE=HCAPLUS	ABB=ON	L14 AND L21	
L23	2	SEA	FILE=HCAPLUS	ABB=ON	L22 AND (ELECTROLYTE? OR BATTER?)	
L24	516	SEA	FILE=HCAPLUS	ABB=ON	L14 AND (?URETHANE? OR ?ISOCYANT?)	
L25	8	SEA	FILE=HCAPLUS	ABB=ON	L24 AND (ELECTROLYTE? OR BATTER?)	
L26	696	SEA	FILE=HCAPLUS	ABB=ON	L14 AND (?URETHANE? OR ?ISOCYANAT?)	
L27	13	SEA	FILE=HCAPLUS	ABB=ON	L26 AND (ELECTROLYTE? OR BATTER?)	
L28	29	SEA	FILE=HCAPLUS	ABB=ON	L11	
L29	1	SEA	FILE=HCAPLUS	ABB=ON	L28 AND (ELECTROLYTE? OR BATTER?)	
L30	1	SEA	FILE=HCAPLUS	ABB=ON	L28 AND ELECTROCHEM?/SC, SX	
L31	20	SEA	FILE=HCAPLUS	ABB=ON	L16 OR L19 OR L20 OR L23 OR L25 OR L27 OR L29 OR L30	
L32	14753	SEA	FILE=HCAPLUS	ABB=ON	L7 OR L9	
L33	34	SEA	FILE=HCAPLUS	ABB=ON	L14 AND L32	
L34	3	SEA	FILE=HCAPLUS	ABB=ON	L33 AND ELECTROCHEM?/SC, SX	
L35	4	SEA	FILE=HCAPLUS	ABB=ON	L33 AND (ELECTROLYTE? OR BATTER?)	
L36	22	SEA	FILE=HCAPLUS	ABB=ON	L31 OR L34 OR L35	
L38	6627	SEA	FILE=REGISTRY	ABB=ON	9004-34-6/CRN	
L39	1	SEA	FILE=REGISTRY	ABB=ON	9004-64-2	
L40	19075	SEA	FILE=REGISTRY	ABB=ON	75-56-9/CRN	

L42 23908 SEA FILE=REGISTRY ABB=ON 75-21-8/CRN
 L43 17712 SEA FILE=REGISTRY ABB=ON 101-68-8/CRN
 L44 14351 SEA FILE=REGISTRY ABB=ON L6 AND L43
 L45 6399 SEA FILE=REGISTRY ABB=ON L6 AND (L38 OR L40 OR L42)
 L46 14112 SEA FILE=HCAPLUS ABB=ON L44
 L47 7675 SEA FILE=HCAPLUS ABB=ON L39
 L48 4596 SEA FILE=HCAPLUS ABB=ON L45
 L49 24 SEA FILE=HCAPLUS ABB=ON L14 AND L46
 L50 24 SEA FILE=HCAPLUS ABB=ON L14 AND (L47 OR L48)
 L51 47 SEA FILE=HCAPLUS ABB=ON L49 OR L50
 L52 2 SEA FILE=HCAPLUS ABB=ON L51 AND (ELECTROCHEM?/SC, SX OR
 ELECTROLYTE? OR BATTER?)
 L54 22 SEA FILE=HCAPLUS ABB=ON L36 OR L52
 L55 1 SEA FILE=REGISTRY ABB=ON 35466-87-6
 L56 4 SEA FILE=REGISTRY ABB=ON 35466-87-6/CRN
 L57 5 SEA FILE=REGISTRY ABB=ON L55 OR L56
 L58 18 SEA FILE=HCAPLUS ABB=ON L57
 L59 12 SEA FILE=HCAPLUS ABB=ON L58 AND (ELECTROCHEM?/SC, SX OR
 ELECTROLYTE? OR BATTER?)
 L62 1 SEA FILE=REGISTRY ABB=ON 9002-89-5
 L63 1 SEA FILE=REGISTRY ABB=ON "POLYVINYL ALCOHOL 2-ACRYLAMIDO-2-MET
 HYLPROPIONATE"/CN
 L65 4037 SEA FILE=REGISTRY ABB=ON 557-75-5/CRN *PVA*
 L66 97 SEA FILE=REGISTRY ABB=ON L6 AND L65
 L67 54836 SEA FILE=HCAPLUS ABB=ON L62
 L68 1 SEA FILE=HCAPLUS ABB=ON L63
 L69 53 SEA FILE=HCAPLUS ABB=ON L66
 L70 203 SEA FILE=HCAPLUS ABB=ON L14 AND (L67 OR L68 OR L69)
 L71 5 SEA FILE=HCAPLUS ABB=ON L70 AND (ELECTROCHEM?/SC, SX OR
 ELECTROLYTE? OR BATTER?)
 L72 4 SEA FILE=HCAPLUS ABB=ON (L54 OR L59 OR L71) NOT (L54 OR L59)

=> D L72 BIB ABS HITIND HITSTR 1-4

L72 ANSWER 1 OF 4 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2001:397238 HCAPLUS

DN 135:7790

TI Methods of preparing electrochemical cells

IN Carlson, Steven A.

PA Moltech Corporation, USA

SO PCT Int. Appl., 99 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001039301	A2	20010531	WO 2000-US32140	20001121
	WO 2001039301	A3	20020110		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				

PRAI US 1999-167149P P 19991123

AB Provided are methods of preparing an anode/separator assembly for use in electrochem. cells in which a microporous separator layer, such as a microporous xerogel layer, is coated on a temporary carrier substrate, and an anode active layer, such as lithium metal, is then deposited on the separator layer, prior to removing the temporary carrier substrate from the separator layer. One or more protective coating layers may be coated before or after the coating step of the microporous separator layer and prior to depositing the anode active layer. Addnl. layers, including an edge insulating layer, an anode current collector layer, an electrode insulating layer, and a cathode current collector layer, may be applied subsequent to the coating step of the microporous separator layer. Also, provide are methods of preparing electrochem. cells utilizing anode/separator assemblies prepared by such methods, and anode/separator assemblies and electrochem. cells prepared by such methods.

IC ICM H01M004-00

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)

ST **battery** anode separator assembly

IT Primary **batteries**

Secondary **batteries**

(lithium; methods of preparing electrochem. cells)

IT **Battery** anodes

Battery electrolytes

Coating materials

Polymer **electrolytes**

Primary **battery** separators

Secondary **battery** separators

Xerogels

(methods of preparing electrochem. cells)

IT **32535-84-5**, Ammonium zirconyl carbonate

RL: RCT (Reactant); RACT (Reactant or reagent)

(methods of preparing electrochem. cells)

IT 1314-23-4, Zirconium oxide, uses 1318-23-6, Pseudoboehmite 1332-29-2, Tin oxide 1344-28-1, Aluminum oxide, uses 2695-37-6, Sodium styrene-4-sulfonate 7440-50-8, Copper, uses 7631-86-9, Silicon oxide, uses **9002-89-5**, airvol 125 9003-53-6D, Polystyrene, sulfonated 13463-67-7, Titanium oxide, uses 25038-59-9, Polyethylene terephthalate, uses 50856-26-3, Polyethylene glycol divinyl ether

RL: TEM (Technical or engineered material use); USES (Uses)

(methods of preparing electrochem. cells)

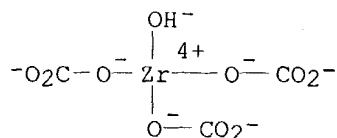
IT **32535-84-5**, Ammonium zirconyl carbonate

RL: RCT (Reactant); RACT (Reactant or reagent)

(methods of preparing electrochem. cells)

RN 32535-84-5 HCAPLUS

CN Zirconate(3-), tris[carbonato(2-)-κO]hydroxy-, triammonium, (T-4)- (9CI) (CA INDEX NAME)

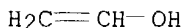


● 3 NH₄⁺

IT 9002-89-5, airvol 125
 RL: TEM (Technical or engineered material use); USES (Uses)
 (methods of preparing electrochem. cells)
 RN 9002-89-5 HCAPLUS
 CN Ethenol, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 557-75-5
 CMF C2 H4 O



L72 ANSWER 2 OF 4 HCAPLUS COPYRIGHT 2004 ACS on STN
 AN 2001:397233 HCAPLUS
 DN 135:7785
 TI Methods of preparing electrochemical cells
 IN Carlson, Steven A.; Person, Patricia C.
 PA Moltech Corporation, USA
 SO PCT Int. Appl., 103 pp.
 CODEN: PIXXD2
 DT Patent
 LA English
 FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001039294	A2	20010531	WO 2000-US32233	20001121
	WO 2001039294	A3	20020110		

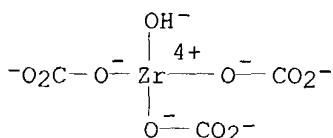
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
 CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR,
 HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,
 LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU,
 SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN,
 YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
 DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
 BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRAI US 1999-167149P P 19991123
 US 1999-167150P P 19991123

AB Provided are methods of preparing a cathode/separator assembly for use in
 electrochem. cells in which a protective coating layer is coated on a
 temporary carrier substrate, a microporous separator layer is then coated
 on the protective coating layer, and a cathode is then coated or laminated

on the separator layer, prior to removing the temporary carrier substrate from the protective coating layer. Also, provided are methods of preparing electrochem. cells utilizing cathode/separator assemblies prepared by such methods, and cathode/separator assemblies and electrochem. cells prepared by such methods.

- IC ICM H01M002-00
 CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
 ST **battery** cathode separator assembly
 IT **Battery** cathodes
 Coating materials
 Conducting polymers
 Polymer **electrolytes**
 Primary **batteries**
 Primary **battery** separators
 Secondary **batteries**
 Secondary **battery** separators
 Xerogels
 (methods of preparing electrochem. cells)
 IT **32535-84-5P**, Ammonium zirconyl carbonate
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (methods of preparing electrochem. cells)
 IT 1314-23-4, Zirconium oxide, uses 1318-23-6, Pseudoboehmite 1332-29-2, Tin oxide 1344-28-1, Aluminum oxide, uses 2695-37-6, Sodium styrene-4-sulfonate 7631-86-9, Silicon oxide, uses **9002-89-5**, Polyvinyl alcohol 9003-53-6D, Polystyrene, sulfonated 13463-67-7, Titanium oxide, uses 25038-59-9, Polyethylene terephthalate, uses 115672-18-9, Lithium sulfide (Li₂(S₈))
 RL: TEM (Technical or engineered material use); USES (Uses)
 (methods of preparing electrochem. cells)
 IT **32535-84-5P**, Ammonium zirconyl carbonate
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (methods of preparing electrochem. cells)
 RN 32535-84-5 HCAPLUS
 CN Zirconate(3-), tris[carbonato(2-)-κO]hydroxy-, triammonium, (T-4)-(9CI) (CA INDEX NAME)



●3 NH₄⁺

- IT **9002-89-5**, Polyvinyl alcohol
 RL: TEM (Technical or engineered material use); USES (Uses)
 (methods of preparing electrochem. cells)
 RN 9002-89-5 HCAPLUS
 CN Ethenol, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 557-75-5
CMF C2 H4 O

H₂C=CH-OH

L72 ANSWER 3 OF 4 HCAPLUS COPYRIGHT 2004 ACS on STN
AN 2001:397232 HCAPLUS
DN 135:7784
TI Methods of preparing a cathode/separator assembly for use in
electrochemical cells
IN Carlson, Steven A.
PA Moltech Corporation, USA
SO PCT Int. Appl., 100 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 3

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001039293	A2	20010531	WO 2000-US32231	20001121
WO 2001039293	A3	20020117		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				

PRAI US 1999-167150P P 19991123

AB Provided are methods of preparing a cathode/separator assembly for use in electrochem. cells in which a protective coating layer, such as a single ion conducting layer, is coated on a temporary carrier substrate, a microporous separator layer is then coated on the protective coating layer, and a cathode active layer is then coated on the separator layer, prior to removing the temporary carrier substrate from the protective coating layer. Addnl. layers, including an edge insulating layer, a cathode current collector layer, an electrode insulating layer, an anode current collector layer, an anode layer such as a lithium metal layer, and an anode protective layer, such as a single ion conducting layer, may be applied subsequent to the coating step of the microporous separator layer. Also, provided are methods of preparing electrochem. cells utilizing cathode/separator assemblies prepared by such methods, and cathode/separator assemblies and electrochem. cells prepared by such methods.

IC ICM H01M002-00

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)

Section cross-reference(s): 38

ST **battery** cathode separator assembly

IT **Battery** anodes

Battery cathodes

Battery electrolytes

Polymer **electrolytes**

Primary **batteries**

Secondary **battery** separators

Xerogels

(methods of preparing cathode/separator assembly for use in electrochem. cells)

IT 1314-23-4, Zirconium oxide, uses 1318-23-6, Pseudoboehmite 1332-29-2, Tin oxide 1344-28-1, Alumina, uses 2695-37-6, Sodium styrene-4-sulfonate 7631-86-9, Silica, uses **9002-89-5**, Polyvinyl alcohol 9003-53-6D, Polystyrene, sulfonated 11114-17-3, Fluorad FC 430 13463-67-7, Titanium oxide, uses 25038-59-9, Polyethylene terephthalate, uses 50856-26-3, Polyethylene glycol divinyl ether 122525-99-9, Zonyl FSO-100

RL: TEM (Technical or engineered material use); USES (Uses)

(methods of preparing cathode/separator assembly for use in electrochem. cells)

IT **32535-84-5**, Ammonium zirconyl carbonate

RL: RCT (Reactant); RACT (Reactant or reagent)

(precursor; methods of preparing cathode/separator assembly for use in electrochem. cells)

IT **9002-89-5**, Polyvinyl alcohol

RL: TEM (Technical or engineered material use); USES (Uses)

(methods of preparing cathode/separator assembly for use in electrochem. cells)

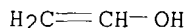
RN 9002-89-5 HCAPLUS

CN Ethenol, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 557-75-5

CMF C2 H4 O



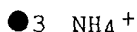
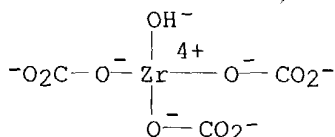
IT **32535-84-5**, Ammonium zirconyl carbonate

RL: RCT (Reactant); RACT (Reactant or reagent)

(precursor; methods of preparing cathode/separator assembly for use in electrochem. cells)

RN 32535-84-5 HCAPLUS

CN Zirconate(3-), tris[carbonato(2-)-κO]hydroxy-, triammonium, (T-4)- (9CI) (CA INDEX NAME)



L72 ANSWER 4 OF 4 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2001:152279 HCAPLUS

DN 134:195211

KATHLEEN FULLER EIC 1700 REMSEN 4B28 571/272-2505

TI Synthesis and properties of crosslinked monodisperse ion exchanger beads with chelating functionality for wastewater treatment
 IN Klipper, Reinhoild; Struver, Werner; Schnegg, Ulrich; Hees, Bruno; Lehmann, Bernhard; Lutjens, Holger
 PA Bayer Ag, Germany
 SO Eur. Pat. Appl., 8 pp.
 CODEN: EPXXDW
 DT Patent
 LA German
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1078690	A2	20010228	EP 2000-117275	20000816
	EP 1078690	A3	20030122		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	DE 19954399	A1	20010301	DE 1999-19954399	19991112
	US 6649663	B1	20031118	US 2000-643049	20000821
	JP 2001098018	A2	20010410	JP 2000-250893	20000822
	CN 1287887	A	20010321	CN 2000-126066	20000828
	CN 1129482	B	20031203		
	US 2004082744	A1	20040429	US 2003-687780	20031017
PRAI	DE 1999-19940866	A	19990827		
	DE 1999-19954399	A	19991112		
	US 2000-643049	A3	20000821		

AB Monodisperse ion exchangers with chelating functional groups are prepared by: (1) radical polymerization of monomer droplets consisting of a monovinyl aromatic compound and a poly(vinylarom. compound) to monodisperse crosslinked polymer beads, (2) amidomethylation of the polymer beads to phthalimide derivs., (3) reduction (e.g., with alkaline formalin solution) of the amidomethylated

beads to aminomethylated polymer beads, and (4) reaction of the aminomethylated polymer beads to graft incorporated chelating groups. The polymerization is preferably carried out in microencapsulated form in the presence of a complex coacervates, such as a protective colloid (e.g., gelatin, starch, polyvinyl alc., etc.). Suitable chelating functional side groups are of general structure $-(CH_2)_nNR_1R_2$, in which $R_1 = H$, CH_2CO_2H or $CH_2P(:O)(OH)_2$; $R_2 = CH_2CO_2H$ or $CH_2P(:O)(OH)_2$; and $n = 1-4$. The ion exchangers are useful for removal of heavy metals or precious metals from aqueous solns. derived from alkaline earth or alkali metal brines, from alkali chloride electrolysis, from aqueous HCl, from wastewater or flue gas scrubbing wastewater, from landfill leachate, from hydrocarbon processing (e.g., of natural gas, natural gas condensate, petroleum refining, etc.), and from processing of liquid or gaseous halohydrocarbons. The heavy metals or precious metals that can typically be removed include Hg, Fe, Co, Ni, Cu, Zn, Pb, Cd, Mn, U, V, platinum group metals, Au, Ag, Rh, or noble metal-containing spent catalysts.

IC ICM B01J045-00
 ICS C02F001-42; C08F008-00
 CC 48-1 (Unit Operations and Processes)
 Section cross-reference(s): 38, 61, 72
 IT 78-67-1, 2,2'-Azobis(isobutyronitrile) 94-17-7, Bis(p-chlorobenzoyl) peroxide 94-36-0, Dibenzoyl peroxide, uses 105-74-8, Dilauroyl peroxide 686-31-7, tert-Amyl peroxy-2-ethylhexanoate 1561-49-5, Dicyclohexylperoxydicarbonate 3006-82-4, tert-Butyl peroxy-2-ethylhexanoate 13052-09-0, 2,5-Bis(2-ethylhexanoylperoxy)-2,5-dimethylhexane 13467-82-8, tert-Butyl peroctoate 13472-08-7, Butanenitrile, 2,2'-azobis[2-methyl-
 RL: CAT (Catalyst use); USES (Uses)

(polymerization initiator; synthesis and properties of crosslinked monodisperse ion exchanger beads with chelating functionality for wastewater treatment)

IT 79-10-7D, Acrylic acid, esters, polymers 79-41-4D, Methacrylic acid, esters, polymers 9002-89-5, Poly(vinyl alcohol) 9003-01-4, Polyacrylic acid 9003-39-8, Poly(vinylpyrrolidone) 9005-25-8, Starch, uses 25087-26-7, Polymethacrylic acid

RL: NUU (Other use, unclassified); USES (Uses)

(protective colloids; synthesis and properties of crosslinked monodisperse ion exchanger beads with chelating functionality for wastewater treatment)

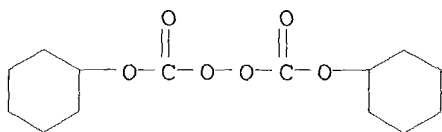
IT 1561-49-5, Dicyclohexylperoxydicarbonate

RL: CAT (Catalyst use); USES (Uses)

(polymerization initiator; synthesis and properties of crosslinked monodisperse ion exchanger beads with chelating functionality for wastewater treatment)

RN 1561-49-5 HCAPLUS

CN Peroxydicarbonic acid, dicyclohexyl ester (6CI, 8CI, 9CI) (CA INDEX NAME)



IT 9002-89-5, Poly(vinyl alcohol)

RL: NUU (Other use, unclassified); USES (Uses)

(protective colloids; synthesis and properties of crosslinked monodisperse ion exchanger beads with chelating functionality for wastewater treatment)

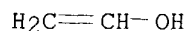
RN 9002-89-5 HCAPLUS

CN Ethenol, homopolymer (9CI) (CA INDEX NAME)

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CRN 557-75-5

CMF C2 H4 O



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